Project GTZ TA No: 07.2023.5-001.00
Project Document No: BLS - TV 001
Edition: 01

REPORT ON COMMUNITY BASELINE SURVEY

INCORPORATING KNOWLEDGE – ATTITUDE – PRACTICE & CUSTOMER SATISFACTION

TRA VINH TOWN - TRA VINH PROVINCE

Hanoi, March 2009

Ministry of Construction – Hanoi

in cooperation with

Deutsche Gesellschaft für Technische Zusammenarbeit (GTZ) GmbH

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ACKNOWLEDGEMENT

First of all, the survey team sincerely would like to send our thanks to the Management Boards of People's Committee in Tra Vinh Town and province who created favorable conditions for the team to conduct the Baseline Survey for the Waste Water and Solid Waste Management Program.

We also thank the WSDC Director, Ward leaders who cooperated, collaborated and participated in the survey as well as all local interviewees living in Ward 2, 4, 6 and 9 who volunteered their time to make this work a success.

We also thank Mr. Frank Pogade and Mr. Greg Thomas – Manager and Consultant of WWM program, who supported and created conditions for the survey and other members in the survey team who participated in the survey.

Finally, we greatly thank Directorate Board of GTZ in Vietnam supported budget to conduct and complete the survey report.

Sincerely!

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ABBREVIATIONS

BLS	Baseline Survey
CCU	Customer Care Unit
CIDA	Canadian International Development Agency
CPM	Community Participation Management
CRM	Customer Relations Management
CSS	Customer Satisfaction Survey
FGDs	Focus Group Discussions
IDI	In-depth Interview
IEC	Information - Education – Communication
KAP	Knowledge - Attitude - Practice
MOs	Mass Organizations
SDRC	Center for Social Work and Community Development Research and Consultancy
VND	Vietnam Dong
WSDC	Water Supply and Drainage Company
WU	Women's Union
WWC	Wastewater Management Companies
WWM	Waste Water and Solid Waste Management in Provincial Centers
YU	Youth Union

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EXECUTIVE SUMMARY

The overall goal of the Waste Water and Solid Waste Management in Provincial Centers project (WWM) is the enhancement of environmental conditions through the provision of improved wastewater facilities, comprehensive and efficient waste water management, improving customer services, and gradual changes of community awareness and behavior pattern. In order to achieve this goal, a Baseline Survey (BLS) was carried out to identify the actual situation regarding the Water Supply, Waste Water Management and Environmental Sanitation of urban people in Tra Vinh City.

The survey's main results are presented in following three main parts:

- Knowledge Attitude and Practice (KAP) related to water use, waste water and sanitation;
- Information Education and Communication (IEC) practices/ activities;
- Customer Satisfaction with the existing piped water, waste water and solid waste collection services.

Water use

The **piped water is the main source of water** used in the four surveyed wards for all three purposes; cooking, drinking and bathing/washing - on average by 73.7 % of respondents. Only in the case of water used for drinking did 40.9 % also mention using purified/ bottled water.

The **quality of water** used has been assessed as good by the majority of interviewees -66.7 % mentioned "good" and only 0.7 % "poor", the rest opted for "acceptable". However, it is worth mentioning that some perceived the drinking water to have a metallic taste, be yellow in color, deposit lime sediment and have a bad odor.

The median **monthly payments for water** range between 30 – <50 000 VND (25.4%). 71% of interviewees consider the **water price** as "moderate/cheap", with only 10.4 % who perceive water prices as expensive.

Sanitation/ Household toilets

The distribution of household toilets is very high - 94.6 % of interviewees reporting to have one. Of those, the vast majority (95.8 %) reported having a septic tank toilet. 52.6 % of those who do not have a household toilet, stated their willingness to borrow money in order to construct a toilet. The knowledge of interviewees regarding environmental sanitation however is low. Only 53.8 % of interviewees understood the link between using the river for defecation and the danger caused by this behavior to the public as well as personal health. Moreover 5.3 % even stated that using the river or field as a toilet *is not* harmful at all. Not very surprising though, that 3.0 % of respondents still use fish pond toilets and thus threaten their own and public health. This gap between knowledge and practice has to be filled with suitable awareness raising campaigns (more on this in following sections).

Waste water/ Drainage

Most waste water flows from the households to the public drainage system along the main road. However, in some areas throughout the four surveyed wards, there is stagnant water and periods of flooding during the rainy season due to the incomplete/ small size of sullage pits relative to the increasing population and overcrowded neighborhoods. Due to a lack of rubbish bins, people drop solid waste into the uncovered drains causing blockages and the water to stagnate; mainly at points where the small sullage pits join the tertiary system to the main pipes. It is an inter-Ward system.

Solid waste

77.4 % of interviewees reported that they were served by a solid waste collection service. Of those, the majority (95.2 %) state that solid waste was collected daily. As for those households not using a solid waste service, alternative waste disposal methods are used - burning is the most prevalent method mentioned (50.6 %).

Although 76 % of interviewees are already satisfied with the current solid waste collection service, 59.4 % indicated a willingness to pay for improved services within the range of "<= 10 000 VND" per month.

IEC practice/ activities

There is a serious lack of IEC activities which is manifested in the very low levels of interviewees stating that they have been informed on water, wastewater and solid waste issues in the past six months. Between 80 – 90 % (depending on the issue) reported not having received any information on the aforementioned issues in the last six months.

In descending order, the most used channels in the sparse information effort according to interviewees are "television", "neighbors/ friends" and "respected people in the Ward". The channels perceived as most effective are "home visit", "television", "neighborhood/Ward meeting". This means the channels perceived as most effective by interviewees and those already used so far are almost consistent. Besides, in the Wards, there are broadcasting program through the loudspeaker twice a day.

The IEC activities are mainly carried out by the local authorities. The People's Committee of the Ward launched the movement through the Mass Organizations combine with the other propaganda programs.

Satisfaction with piped water, waste water and solid waste collection service

The satisfaction rates among interviewees with the water, waste water and solid waste collection services are generally high with the highest satisfaction level re the water services (96.4 %) and the lowest re wastewater handling services (69.1). In fact, those who are dissatisfied with the waste water services are a considerable 31%.

Although- as mentioned above- there was dissatisfaction with the company's services among interviewees, hardly anyone complained officially: As regards wastewater services for example, only 5.4 % stated that they expressed their complaint to the authorities. This may be attributed to interviewees' lack of knowledge of where to complain - this has to be addressed with appropriate measures, such as IEC and PAC campaigns.

CHAPTER I: INTRODUCTION

I. LOCATION OF THE SURVEY1

Tra Vinh is a coastal province in Mekong Delta region located between the lower section of Tien and Hau Rivers bordered on the East Sea, in the South of Vietnam. The provincial central is Tra Vinh town, situated in the National Highway No 53, about 200 kilometers away from Ho Chi Minh City and 100 kilometers from Can Tho City.

Tra Vinh province has seven districts and one town including Cang Long, Tieu Can, Cau Ke, Chau Thanh, Tra Cu, Cau Ngang, Duyen Hai and Tra Vinh town with a total natural area of over 2,225 square kilometers and a population of more than 1 million people.

Regarding the water supply and drainage system in Tra Vinh town, the water produced by Tra Vinh Water Supply Company supplied for the whole Tra Vinh town and a part of Chau Thanh province. Currently, there are more than 3,000 wells providing used water for rural areas in the whole province. The rate of households using clean water has rapidly increased since 1997 when 45% of households in the province used clean water. In 1998 the rate increased to 55%, and in 1999 it reached 65-70%. In the whole Tra Vinh town, there is a common drainage system covering over 18,400 meters making up 60% of the total length of roads in the town.

Tra Vinh town

Since the re-establishment of the province (May 1992), Tra Vinh town has become a provincial town as well as a political, economic, socio-cultural and national defence and security center of the province. The town has nine Wards and one commune with a total natural of 6,576 ha and a population of 87,731 people (among whom Khmer people making up 19.72% and Hoa people making up 6.06%). Majority of the people earn their living by trade-service, small scale industry and agriculture and non-agricultural labour making up 73.11%.

According to the vice-chairman of Tra Vinh town, in charge of urban management, at the time the province was re-established, the infrastructure for water supply and drainage system was not fully completed. Some years later, the provincial and town People's Committees gradually completed the water supply system. Recently, the number of people using clean water has been increasing (the use of clean water has been set as a target in the 5 year plan (2006-2010) of the town People's Committee that 86% of population in the rural area can access clean water). According to WSDC Vice-Director, now there is 39,782 km of drainage system throughout the whole town (covering 85% of the whole town). In fact, this is only the drainage system without any of waste water treatment. However, the situation on environmental pollution such as solid waste, waste water, smoke and polluted air in the crowded population areas and the markets, etc. is still a problem that has to be addressed urgently.

[1] Information accessed from the website: http://www.travinh.gov.vn (dated 2/4/2008), the Yearly Report of Tra Vinh, and In-depth Interview with Vice-Chairman of Tra Vinh town.

Map of Tra Vinh Capital Town
(The symbol is to mark the 4 survey spots: Ward 2, 4, 6 and 9 in Tra Vinh Town)

II. BACKGROUND OF THE SURVEY

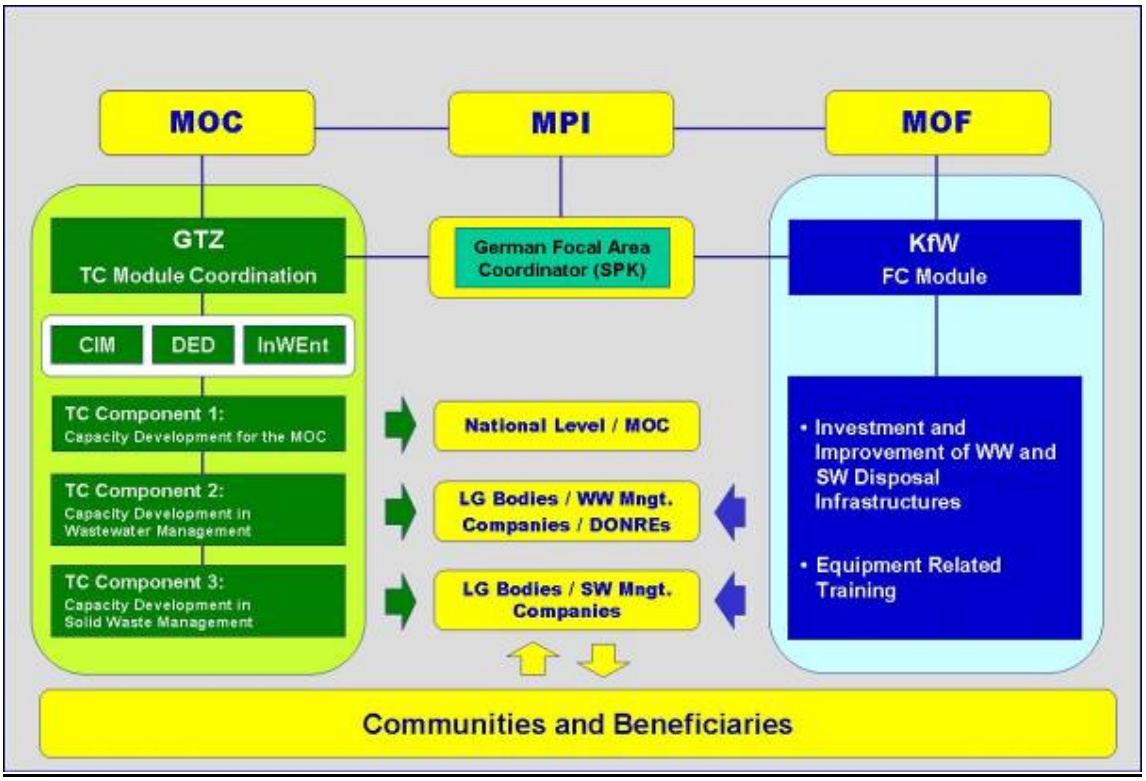
"Wastewater and Solid Waste Management in Provincial Centers" is a program funded by the German government and jointly implemented by different institutions of the Government of Vietnam and several German Development Cooperation (GDC) agencies. The program consists of two complementary modules (Figure 1):

a) the Financial Cooperation (FC) module, jointly financed by the German Development Bank (KfW) and the Government of Vietnam (GoV), and

b) the Technical Cooperation (TC) module, implemented by the German Technical Cooperation (GTZ), the German Development Service (DED) and InWEnt with the Ministry of Construction (MOC) as the responsible line ministry.

The FC module focuses on the provision of new infrastructure facilities for wastewater and solid waste management in currently six provincial cities in Vietnam. The TC module consists of three components that provide "Capacity Development for the MOC" (TC Component 1), "Capacity Development in Wastewater Management" (TC Component 2) – also referred to as "WWM" – and "Capacity Development in Solid Waste Management" (TC Component 3) – also referred to as "SWM".

Figure 1: Set-up of German Development Cooperation for Wastewater and Solid Waste Management in Vietnam



The overall objective of the cooperation program reads:

"Conditions for sustainable wastewater disposal and solid waste management are improved."

The present study was conducted in the scope of TC Component 2 (WWM) that is implemented by GFA Consulting Group on behalf of German Technical Cooperation (GTZ) and commenced in February 2005. In August 2008, WWM launched its second phase that is scheduled to end in July 2011.

At this point, WWM is providing technical support to local governments, public wastewater companies (WWC) and Departments of Natural Resources and Environment (DONRE) in six provincial urban centers in Vietnam, including the cities of Bac Ninh, Hai Duong, Vinh, Can Tho, Soc Trang and Tra Vinh. Depending on the outcome of ongoing investment studies and the availability of sufficient funds, an extension of WWM to more cities is foreseen within the current phase. WWM focuses on creating favorable conditions for improved public wastewater services and raising awareness on wastewater related issues among the communities and beneficiaries. The overall objective of TC Component 2 is accordingly:

"Wastewater management in the supported provincial centers is improved."

In order to achieve this objective, WWM applies a holistic approach and concentrates its activities on capacity building on the following seven areas:

- Local Government Level
  - Creating favorable local institutional framework conditions for wastewater management
- Wastewater Company Level
  - Institutional & organizational development
  - Financial management & tariff calculation
  - Asset management, operation & maintenance (O&M) and documentation
  - Customer relations management and community participation, and
  - Human resource management
- DONRE Level
  - Surface water and effluent discharge monitoring

The present Community Baseline Survey (BLS) is attributed to the support of the WWCs in the improvement of customer relations and community participation. The TC component commissioned two Vietnamese consulting companies to implement a total of six surveys. Necessary preparations were made in close collaboration with the Customer Care Units (CCUs) of the participating WWCs as well as WWM advisors. Preparations included, among other things, the finalization of data collection tools, training of interviewers, and interviewee selection. The surveys in the three northern provinces were conducted by the sub-contractor CEPAC, a Vietnamese company specialized in household surveys. SDRC, another Vietnamese survey institution, was commissioned to conduct this study in the three provinces in the Project Area South, Can Tho, Soc Trang and **Tra Vinh.**

III. OBJECTIVES OF THE SURVEY

The survey team conducted the interviews with representatives from local authority leaders and related mass organizations and branches at provincial and Ward levels as well as

individual households living in the four (4) Wards of the capital towns. Specific objectives of the survey are as follows,

1) To determine *the current practices of urban people* in the program sites regarding the management of water supply, wastewater, storm water and sanitation.
2) To determine *the current knowledge of people* in the program sites regarding the management of water supply, wastewater, storm water and sanitation.
3) To determine *the current attitudes of people* in the program sites towards the management of water supply, wastewater, storm water and sanitation.
4) To determine *the main influences on customers' attitudes* towards water supply, wastewater, storm water and sanitation.
5) To determine *the main constraints on customers* increasing their knowledge of water supply, wastewater, storm water and sanitation.
6) To provide *information* to the Water Supply and Sewage Companies and other stakeholders in order *to improve the effectiveness* of their CRM and CPM programs, including targeted Program Information Campaigns, Public Awareness Campaigns, the developing of IEC materials and selection of suitable Pilot Measures.
7) To provide *information on customer satisfaction and needs* to the Water Supply and Sewage Companies in order to improve the performance of Customer Care Units.
8) To identify the most effective means of informing, educating and communicating with the community on program-related issues.
9) To determine, the views of customers regarding the level of services provided by the company including as well as their attitudes concerning wastewater tariffs.
10) To provide on- the-job capacity building to officers of partner companies on the subjects of participatory research, basic skills and techniques for conducting base-line studies.

CHAPTER II: METHODOLOGY

I. SCOPE OF THE SURVEY

1. Survey Sites and Target Groups

The survey was conducted in Ward 2, 4, 6 and 9 of Tra Vinh capital town, among which Ward 2, 4 and 6 participating in the WWM program for Tra Vinh province. Ward 9 is actually outside the WWM Project area – it is on the boundary and might be included in a future expansion. Results from this study indicate that it is deserving of consideration – it has many poor, many ethnic Khmer and poor water, sanitation and solid waste collection services.

Details of the target groups of the survey are as indicated below:

- At the provincial level: Representatives of leaders from Capital Town, Ethnic Committee, Temples, Water Supply and Drainage Company;
- At the Ward level: Representatives of leaders from local authority (Chairman or Vice-chairman of the Ward), mass organizations and households in Ward 2, 4, 6 and 9.

2. Methods and Tools

The survey applied community participatory approach. Before the survey implementation, consultants from the Center for Social Work and Community Development Research and Consultancy (SDRC) provided skills for staff of Planning Department of Water Supply and Drainage Company in the 3 provinces including Tra Vinh, Soc Trang and Can Tho through a 4-day full-time training course on participatory data collection method in Tra Vinh province in March 2008. The data collection of the survey in Tra Vinh province was conducted right after the training course had finished. During the whole process of the survey in Tra Vinh town, 12 staff of Tra Vinh Water Supply and Drainage Company (Tra Vinh WSDC) had their capacity enhanced/ improved through their application of acquired knowledge and skills in participation and cooperation with the four SDRC researchers to conduct the quantitative as well as qualitative interviews.

Before the implementation of data collection, WWM staff (Mrs Nghiem and Mr Duc) co-operated with SDRC staff (Mr Man) and Tra Vinh WSDC staff (Mr Dung and Mrs Thao) to prepare for the survey. The WSDC staff contacted and arranged appointments as well as location for the interviews with target group such as leaders of the related companies, provincial and Ward leaders. List of interview households was selected according to sample size method and approved by WWM, SDRC and WSDC staff.

During the survey, WSDC staff and SDRC staff were responsible for data collection at the households in the Wards. Besides, WSDC staff also assisted SDRC staff in FGDs and in-depth interviews in order to grasp a better understanding on the water supply and drainage situation in the Wards. At the end of each day for data collection, the survey team including WSDC and SDRC staff got together for data checking, modifying and complement of the collected information in the households interview questionnaires/samples as well as for the field experience sharing for the following day of the survey. In the early morning of each following day, the staff of WSDC and SDRC sat together again for planning the tasks to be done in the day and received the household interview samples of that day.

Qualitative and quantitative methods were used in this survey with support of participatory approach. Quantitative methods were applied for reliable and representative data collection and qualitative methods such as focus group discussions (FGDs) were applied for clarification and clear explanation of the quantitative result.

Tools used for data collection are the six question schedules including four guidelines for in-depth interviews, one guideline for FGDs and one questionnaire for household interviews (used for six target groups: Water Supply and Drainage Company, Ethnic Committee,

Temple, local leaders, Mass Organizations (MOs) and households in combination of PRA tools. Details are as in the following:

- Secondary data collection of the four surveyed Wards and Tra Vinh province;
- In-depth interview with representatives of Local authority, Water Supply and Drainage Company, Ethnic committee and Temples leaders;
- Focus group discussion with representatives of MOs, residential area and households;
- At-site observation and photo-taking.

3. Data Analysis

Quantitative data was processed with the use of SPSS software program (Version 12.0).

Qualitative data was recorded on A0 paper and analyzed in in-depth interview with leaders, MOs/ male/ female group according to the Ward.

4. Survey Sampling

Ward 2, 4, 6 and 9 were selected for participating in the baseline survey based on the socio-economic differences.

Quantitative household interviews

Sample size[2] was selected based on the known basic population at a confidence level of 95 % with margin of error (confidence interval) of 5%. Detail is as follows,

Town	Estimated Population in Service Area	Approximate No. Households	Sample size Minimum
Tra Vinh	77,930	20,000	350

Individual households selected based on

- A list provided by the Water Supply and Drainage Company;
- Number of households and location of each Ward;
- Randomly selection at an interval of 5 - 10 households based on/calculated from the list and the agreed number of households for interview;
- Age of the interviewees ranged from 25-55 years of age;
- A balanced number of female and male interviewees.

In-depth interview with local leaders:

In-depth interviews with leaders at the provincial level included one vice-chairperson of Tra Vinh capital town, one head of Policy and Law department of Ethnic Committee, two heads of Local Temples and one Vice-director of Tra Vinh Water Supply and Drainage Company and four local authority leaders at the Ward level who are chairperson or vice-chairperson of Ward 2, 4, 6, and 9.

Focus group discussion (FGD)

The three Wards selected for FGDs were Wards 2, 6 and 9 with a total of nine groups. In each Ward, there were three focus group discussions including one group of MOs leaders;

[2] Sources: These results were obtained by using two independent online sample size calculator applications (www.surveysystem.com/sscalc.htm, www.raosoft.com/samplesize.html) and Methodology and Techniques used in social research – Nguyen Xuan Nghia, 2004, p.73)

Women's Union, Youth Union and Head of the residential area, and one male group and one female group of local people.

In total, there were nine local leaders, eight group discussions and 350 households interviewed in Tra Vinh province and the four Wards of the program in Tra Vinh capital town. Details of information on sample size and composition are presented in the Table below:

Position/ Location	INDEPTH INTERVIEW with Leaders	FOCUS GROUP DISCUSSION with Representatives of MOs and Households			INDIVIDUAL INTERVIEW
At Provincial level					
Vice-chairperson of Tra Vinh Town	1	-			-
Head Ethnic Committee	1	-			-
Vice Director of WSD Company	1	-			-
Leaders of temples	2	-			-
At Ward level	**Chairperson/ Vice-Chairperson**	**MOs Group**	**Male Group**	**Female Group**	**Households**
Ward 2	1	1	1	1	100
Ward 4	1	0	0	0	100
Ward 6	1	1	1	1	100
Ward 9	1	1	0*	1	50
Total	9	3	2	3	350

(*) There was only 1 male and female FGD (including 5 women + 2 male) due to the absence of participants.

5. Time Frame of the Survey

No	Tasks	Time
1.	Discussion between WWM Consultant and SDRC staff: - Preparation and Planning - Design of survey tools	03-04/ 03/ 2008
2.	Discussion among related partners: WWM Consultant and SDRC staff and Directorate board and staff of related official company of the three provinces: - Tra Vinh Water Supply and Drainage Company - Soc Trang Urban Management Company - Can Tho Water Supply and Drainage Company	05-07/ 03/ 2008 05/ 03/ 2008 06/ 03/ 2008 07/ 03/ 2008
3.	Short training course for staff of the three related companies of Tra Vinh, Soc Trang and Can Tho.	19-22/ 03/ 2008
4.	Planning for the survey	24/ 03/ 2008
5.	Data collection in Tra Vinh Province	25 - 31/ 03/ 2008
6.	Data entry, processing and analysis	01 - 07/ 04/ 2008
7.	Draft report Writing in English	08/04 - 07/ 05/ 2008
8.	Report completion	08/ 05/ 2008
9.	Translation into Vietnamese	07/ 05/ 2008

(See details of survey schedule in the Appendix 1)

6. Data Quality Control Measures

Several quality management measures have been undertaken by the research team in close consultation with company's and WWM staff to assure the reliability and validity of the data collected. Main measures included:

- Pre-test of questionnaires: Before the beginning of the main quantitative data collection, questionnaires were pre-tested during mocked interviews and also in the field with a small sample size. The rationale was to familiarize interviewers with the questionnaire and its structure. Additionally, at this stage potential pitfalls in structure and/or understanding of the questionnaire could be cleared.
- Supervision of interviewees: Interviewers were grouped and each group was supervised by a staff member of SDRC. The supervisor was, on the one hand, the principal contact partner for interviewers during the data collection process. On the other hand, he/ she was responsible to overlook the data collection and to assure proper interview conduction and thus collection of valid data.
- Questionnaire - check after submission: Each day after interviews have been finished, the interviewers submitted their completed questionnaires to the SDRC staff. The latter then checked whether the questionnaires have been completed accurately and in accordance with the given standard. In case of inadequacies interviewees were asked to either solve the problem immediately or if necessary to go back to the respective household in order to solve the objection.

- Random-check whether interviews really have been conducted: A WWM staff randomly called 10 per cent of interviewees and asked them whether they really have been interviewed in the course of the BLS and how the interview process was.

II. SURVEY TEAM

The survey team involves professional researchers from SDRC and members of the task force of Water Supply and Drainage Company in Tra Vinh province, who were trained for data collection.

- SDRC team involves 4 researchers for Tra Vinh province:

  Do Bich Diem (Team leader)

  Chau Hoang Man (Team Member)

  Phan Thi My Nhung (Team Member)

  Nguyen Thi Phuc (Team member)

- Tra Vinh Water Supply and Drainage Company team involves 12 Staff attending the training and 11 staff involving in data collection (See enclosed Appendix 2).

III. ADVANTAGES AND LIMITATIONS OF THE SURVEY

Advantages

- Staff of Tra Vinh Water Supply and Drainage Company cooperated very enthusiastically and participated with the research team to conduct the interviews in the four surveyed Wards.
- Location of the surveyed site was within the city precincts which made the access easier and general conditions more favorable.

Limitations

- Staff of Tra Vinh Water Supply and Drainage Company lacked experience in interviewing and note-taking in the questionnaire samples.
- The survey was carried out mostly during the week/working days at the day time so many households did not have people at home.
- Selection of households was primarily based on the list of people, provided by Water Supply and Drainage Company, who were customers and whose houses were located right at the front of the main road,.
- The name of some interviewed householders was not the same as the name of householders registered on the list provided by the Water Supply and Drainage Company due to the fact that the registered households had sold their houses and moved out.

FGD with local people

Household Interviews

FGD with local people

FGD with MOs and community leaders

CHAPTER III: RESULTS OF THE SURVEY

Chapter III presents the baseline survey results/ findings on the general information of the surveyed households in the research sample, their current knowledge-attitudes-practice/ behavior survey related to water use, waste water & sanitation as well as the current IEC practice in the surveyed areas and finally the level of satisfaction on piped water, waste water and solid waste services.

I. SOCIO-ECONOMIC SITUATION OF THE SURVEYED SITES

Part One gives general information on the socio-economic situation as well as the existing water supply, waste water, environmental sanitation, and IEC activities of the four surveyed Wards collected from the in-depth interviews with local leaders.

If the four surveyed Wards are compared, **Ward 2** is located in the center of Tra Vinh town and has many households doing business (shop houses). According to the Vice-chairman of the Ward, 95% of local people living in the Ward use piped water provided by the Water Supply and Drainage Company including those who own water meters and/or share with those who have one. Thanks to its central location, the solid waste collection service as well as the inter-Wards drainage system still operates very well. The Ward is divided into 3 areas (area 1, 2 and 3) among which area 2 and 3 have a nearly completed infrastructure of water supply and drainage and solid waste collection. Area 1 still has particular environmental sanitation problems in some alleys such as; an inadequate drainage system, residents using fish pond toilets and disposing of rubbish by burying and burning. Waste water is a special problem. Due to a lack of a drainage system the waste water flows directly to the road causing flooding and stagnant water. None of the waste water that flows to the inter-Wards drainage system has been treated including the waste water from health stations and manufacture enterprises (electric welding, lathing, motor-cycle repairing, etc) in the Ward. The solid waste from the health station was brought to the hospital for treatment and those from the manufacture enterprises collected by the solid waste collection service.

The majority of people In **Ward 4** are Kinh; 10% of population is Hoa and 0.5% of households are Khmer. The Ward has six areas and one hamlet located near the suburban area. Business is the major occupation. Approximately 30% of the population earns a living by farming and small scale industry. Some others earn income as unskilled labour (loader, hired labour/ wage-earner, etc.). According to the vice-chairman of Ward 4, the piped water system covers about 98% area of the whole Ward and 100% local people use clean water. A few household living far away do not access the piped water bought from their nearby neighbours. The drainage system only covers some main streets. It has not yet been completed in the alleys. Due to its small size and capacity, stagnant of water occurs. Waste water in some other places flows to the available/ old ditch and to the river. There is solid waste collection service along main roads. Those households located along the river/ canal dispose of their waste in the river/ canal or those living in the remote areas far away from the main road disposed of their waste haphazardly.

82.6% of people in **Ward 6** are Kinh; Hoa make up 12.56%, Khmer is 4.6%, and Ấn is 0.14%. The Ward has 7 areas consisting from area 1 to area 8 (excluding area 5). Small scale industry (producing iron and aluminum doors) and commercial services (chemist's, doing business, etc.) are the main employers in the Ward. In particular there is the town hospital and the main bus/coach station of Tra Vinh province; the Industrial Commercial Bank, and Bach Dang market located in the Ward. In the words of the Ward vice-chairman, 100% of local people in the Ward have clean water for their daily use. However, 2% of households still share water with their neighbour's water meter. In area 8, where there are many Khmer people live, the local people still use hand-pumped well water and rain water in the rainy season. The public drainage system completely covers the main road, areas and small alleys except that in area 8, waste water flows through the ditch to the main drainage system.

Ward 9 is the one Ward of Tra Vinh town, in which a large percentage of Khmer people live - making up 72% of the population. The Ward is divided into 10 areas. The majority of people living in the Ward earn income from agricultural production, small scale industry and small business. In particular, there is a community program funded by CIDA which provides training, capital and machines for local people in sewing and small scale industry production. The Ward chairman revealed that approximately 20% of households living near/ along the main road have piped water. Those households living in the outlying areas use well water (dug and pumped wells). According to him, the piped water system covers fewer households due to a) the distance between the households and b) poverty; the local people in the Ward are still poor and not able to pay for the piped water fees. Environmental sanitation has been assessed by most respondents as not really good. One specific geographical characteristic of the Ward is low land lacking dykes so it is flooded frequently during the rainy season and flood-tide which seriously affects the daily activities and livelihood of local people. Moreover, the household waste water flows freely where it either slowly evaporates or is absorbed into the soil. Household solid waste was burnt/ degrades in the dry season or buried in holes in the rainy season. Solid waste from the market is thrown into the river.

In summary, the basic piped water, waste water and solid waste infrastructure still does not completely cover the 4 Wards. Except the Ward 9, majority of people living in Ward 2, 4 and 6 are able to access the piped water system provided by Tra Vinh Water Supply and Drainage Company.

In regards the waste water, the drainage system is incomplete; small sized sullage pits and pipes lead to flooding and water stagnating in some places in the four Wards. The solid waste collection service is in general perceived as well functioning. However, it could not cover some remote areas. Thus, solid waste is still disposed by a few interviewees by burning, burying, throwing to the river/ empty plot of land by the people themselves.

II. GENERAL INFORMATION OF THE SURVEYED HOUSEHOLDS

This part displays some key socio-economic data of interviewees (quantitative interviews):

1. Age and Gender of the Target Groups

As mentioned in the introduction (survey sampling), the age of the interviewees was projected to range from 25-55 years. In reality, due to some unexpected influences during the survey such as when the interviewer visited the households, interviewees were not at home, the age ranged from 20 to 71 years.

Majority of interviewees is within the age clusters of **41- 50** years (33.1%), **51- 60** years (28%) and **31- 40** years (25.1%).

The rate of male and female interviewees is balanced in accordance with the total number of interviewed people. Details are in the following table:

Table 1: Age and gender of the interviewees

Age / Gender	Years of age						Total (%)
	20-30	31-40	41-50	51-60	61-70	>70	
Male	14	42	60	49	7	1	173 (49.4)
Female	17	46	56	49	8	1	177 (50.6)
Total	**31**	**88**	**116**	**98**	**15**	**2**	**350**
Percentage	**8.9**	**25.1**	**33.1**	**28.0**	**4.3**	**0.6**	**100.0**

In short, the age of target group is predominantly aged from 31-60 (86.2%). There is not much disproportion in age between the ratio of male and female interviewees (the ratio of female is 1.2% higher than that of male).

2. Ethnicity

69.7% of interviewees are Kinh, 18.6% are Hoa and 11.7% are Khmer. Many Khmer people were interviewed in Ward 9 (making up 8% of the total surveyed households).

Table 2: Ethnicity of the interviewees

Ethnicity	Number	Percentage (%)
Kinh	244	69.7
Hoa	65	18.6
Khmer	41	11.7
Total	**350**	100.0

In short, among 350 surveyed households in the 4 Wards, the ratio of Kinh is highest with 69.7%. Particularly, the ratio of Hoa is highest in Ward 6 (11.4%) and the ratio of Khmer is highest in Ward 9 (8%).

3. Education Level

Most interviewees have grade 6-9 (38.3%) and grade 10-12 (32.3%) education level. Few of them are at grade 1-5 (19.4%). Particularly, 0.9% of interviewees are illiterate, in which the number of male is higher than that of female.

It is obviously that because the survey was conducted during weekday, majority of people with higher education were not at home and were at work. Only 8.3% of interviewees had a university/ college level, 0.6% had vocational education and 0.3% had a master's degree'.

Table 3: Education level of the interviewees

Education level	Male	Female	Number	Percentage (%)
Illiterate	2	1	3	0.9
Grade 1-5	20	48	68	19.4
Grade 6-9	66	68	134	38.3
Grade 10-12	65	48	113	32.3
University/ College	19	10	29	8.3
Vocational education	1	1	2	0.6
Master	0	1	1	0.3
Total	**173**	**177**	**350**	100.0

In short, education level of almost interviewees is at secondary (grade 6-9) and at high school (grade 10-12) levels making up 70.6%. Especially, there are more men being illiterate than women.

4. Profession

As mentioned earlier, of those interviewed households located on the both sides of the main road in Tra Vinh town, the majority of interviewees earn their living by small-scale trading (42%). Aggregated, 32% of respondents worked at home doing housework, working as free labour (tailors/ carpenter/motorcycle repairers), or are wage earners, motorcycle drivers or lottery ticket sellers.

16.9% of respondents worked in the formal sector such as official, worker or retired official/ wounded soldier.

8.5% of interviewees have their own business such as farming, animal husbandry and private business.

Table 4: Profession of the interviewees

Profession	Male	Female	Number	Percentage
Official	19	12	31	8.9
Worker	15	5	20	5.7
Small-scale Trading	71	76	147	42.0
Farming	11	14	25	7.1
Animal husbandry	0	1	1	0.3
Private Business	4	0	4	1.1
Housework	3	46	49	14.0
Wage Earners/ Labor	6	4	10	2.9
Honda/ Motorcycle driver	8	2	10	2.9
Tailor/Carpenter/ Motocycle repairers	29	11	40	11.4
Lottery ticket seller	1	1	2	0.6
Retired official/ Wounded soldier	4	4	8	2.3
Student	1	1	2	0.6
Awaiting jobs	1	0	1	0.3
Total	**173**	**177**	**350**	100.0

In short, majority of respondents earn their living by small scale trading (42%). Among them, women are majority and make up a higher ratio than men in small scale trading and staying at home for housework. Particular to the formal sector such as officials, workers or those careers that are particular to work such as motorcycle drivers, carpenters, motorcycle repairers, where men are in the majority and make up a higher ratio than women.

5. Average Monthly Household Income in last 12 Months (est.)

Apart from 5.7% of interviewees who did not want to answer how much their monthly household income was, the average income of the 330 surveyed households corresponded to their employment. As in the above, the majority of interviewees earn a living by doing small-scale trading or work as free labour in the informal sector resulted in their low average

monthly income of 1million-under 2 million VND (37.7%), 500,000 - under 1 million VND (23.1%) and less than 500,000VND (9.4%).

Table 5 on average monthly income according to family size (number of family members) of the surveyed households shows that there is a difference in income of those households having the same family size. However, the survey result on incomes is only relatively because it also depends on the honesty of respondents.

Table 5: Average monthly Hh income over past 12 months (estimated)

Incomes according to no of family member	<500 thousand VND	500,000 – < 1 m. VND	1 – < 2 m. VND	2 – < 3 m. VND	3- < 5 m. VND	> 5 m. VND	Refused, no response	**Total**
1 member	3	0	7	2	0	0	1	13
2 members	3	9	11	1	1	0	2	27
3 members	7	16	27	14	4	3	6	77
4 members	9	23	37	15	6	5	5	100
5 members	4	11	27	10	6	1	2	61
> 5 members	7	22	23	8	6	2	4	72
Total (%)	**33 (9.4)**	**81 (23.1)**	**132 (37.7)**	**50 (14.3)**	**23 (6.6)**	**11 (3.1)**	**20 (5.7)**	**350 (100)**

In short, the result of average income of respondents corresponded to their profession. The majority of households have an average monthly income from 500,000VND to less than 2 million VND.

6. Number of Members in the Households

Majority of surveyed households have from three to five members in the family (68%) and 20.6% of households have more than five members.

Table 6: Number of members in the surveyed households

Members in the HHs	**Number**	**Percentage (%)**
One	13	3.7
Two	27	7.7
Three	77	22.0
Four	100	28.6
Five	61	17.4
More than five	72	20.6
Total	**350**	100.0

7. Means for Entertainment/ Facilities

Most households have television (97.7%) and VCD/DVD recorders (70%). These facts revealed that most households have audio-visual facilities to access information.

Table 7: Facilities in the surveyed households (Multiple answers possible)

Facilities	Number	Percentage (%)
Television	342	97,7
Radio	51	14,6
VCD/DVD	245	70,0

III. KNOWLEDGE-ATTITUDES-PRACTICE (KAP) SURVEY RELATED TO WATER USE, WASTE WATER & SANITATION

Part III provides information on the KAP of people in the survey sample related to water use, waste water and sanitation. These facts will provide a deeper understanding on the current situation of water use, waste water and sanitation in the surveyed area.

1. Water Use

Results from focus group discussions (FGDs) and quantitative interviews showed that there are four main sources of water used in the four surveyed Wards:

- piped water
- rain water
- well water (pumped and dug wells)
- pure water/ bottled water/bought water.

People mainly use piped water provided by Tra Vinh Water Supply and Drainage Company for cooking, drinking, bathing and washing. However, the majority of households live along the main road/ street are able to access the piped water while the other households located in the remote areas, far away from the main road could not. The reasons could be their lack of economic means (money) to connect or the lack of any available piped water system in their area to which they could connect. They have to use well water (pumped and dug wells), buy water (from those households having piped water or from the water seller) and rain water during the rainy season. Besides, many well-to-do households buy pure/ bottled water for drinking (20 liters/ bottle) but some other poor store well water, use alum to treat it and then boil it for drinking. Furthermore, some households use both piped water and rain water or well water to save money.

Regarding quality of the water used, through results of FGDs in the surveyed Wards, it was expected that quality of piped water would be good but the quality was not really high. It has been said by the group of MOs representatives in Ward 2: *"piped water is clear but sometimes aluminous, turns yellow, deposits lime sediment and has a bad odour due to the disinfectant used". The* group of MOs in Ward 6 revealed that the stored water turned yellow if kept for a few days. The female group said that lime sediment appeared on the cooking utensil and after a few days of storing water, there were many impurities in the bottom of the water container, in case the water was frozen in the fridge it would have white thin layer formed on the surface.

Similarly, in Ward 9, it was said that the piped water had less aluminum than the well water but it had to be stored and treated for a few days before cooking. The cooking utensil had lime sediment deposit after a short time of cooking. Result of from male FGD in Ward 9 said

the piped water had a bad odour and a woman in female FGD also said the well water was aluminous as well "*It is not good, each time we pump the water, we have to store for some days, then cooking for drinking*".

In order to explain for such of lime sediment deposit of the piped water, a WSDC staff revealed that due to the use of underground source of water it contained lime and iron sediment but it was under 300pmm which is an allowable content for use. Currently, the company has the lime and physicochemical treatment as well. Another explanation was that there was the sediment deposited at the end of the pipe system if it was not released frequently.

With regard to the main source of water used for **cooking**, among 350 surveyed households, except one case not cooking at home, 88.9% of the surveyed households use piped water for cooking, 4.6% of households use rain water for cooking during the rainy season, 2.9% of households use pumped/ drilled well. A few households use other sources of water such as 3 households in Ward 6 buying water, 2 households in Ward 2 and 1 household in Ward 4 use pure/ bottled water, 4 households in Ward 9 use dug well, 1 household in Ward 2 and 1 household in Ward 4 use both piped water and rain water for cooking.

Related to quality of water used, 59.8% of interviewees who use piped water said it was good, 38.9% of them thought it was acceptable. However, there are still 2 interviewees in Ward 2 and 2 interviewees in Ward 4 supposed that the piped water was dirty. The other sources of water were assessed at good or at an acceptable/ average level such as rain water, pumped/ drilled well water, water from dug wells and pure/ bottled water (Table 8).

Table 8: The main source of water used for cooking and its quality for use

The main source of water for cooking	Dirty/ Poor	Average/ Acceptable	Good	Total
Rain Water	-	1	15	16
Pumped/ drilled well	-	5	5	10
Buying water	-	2	1	3
Piped water	4	121	186	311 (88.9%)
Pure/ bottled water	-	-	3	3
Dug well	-	4	-	4
Rain water + Piped water	-	-	2	2
Not cooking	-	-	-	1
Total (%)	**4 (1.1%)**	**133 (38%)**	**212 (60.6%)**	**350 (100%)**

With regard to the main source of water used for **drinking,** many interviewees use piped water (42.3%) and pure water/ bottled water (40.9%) for drinking. In addition, some other households (10%) use another extra source of rain water during the rainy season. Particularly, people also use other sources such as in Ward 9, the people use pumped/ drilled well (1.4%) and dug well (1.4%). In Ward 6, the people use pumped/ drilled well (0.3%) and bought water (0.9%). In Ward 4, the people use buying water (1.1%).In order to save the payment for piped water, people use both piped water and rain water or pure/ bottled water to drink.

Mentioned about the quality, except 0.6% of interviewees in Ward 2 assessed that the pure water/ bottled water for drinking was dirty/bad, the rest of interviewees valued other sources of water for drinking at average/ acceptable and good levels (Table 9).

Table 9: The main source of water used for drinking and its quality for use

The main source of water for drinking	Dirty/ Poor	Average/ Acceptable	Good	Total
Rain Water	-	5	30	35
Pumped/ drilled well	-	4	2	6
Buying water	-	2	5	7
Piped water	-	54	94	148 (42.3%)
Pure water/ Bottled water	2	12	129	143 (40.9%)
Dug well	-	4	1	5
Rain water + Piped water	-	2	3	5
Piped water + pure/ bottled water	-	-	1	1
Total (%)	**2 (0.6%)**	**83 (23.7%)**	**265 (75.7%)**	**350 (100%)**

With regard to the main source of water used for **bathing and clothes washing**, the vast majority of households (90%) use piped water for bathing and washing. Some other households (6.9%) use pumped/drilled water. A small number of households use rain water (1.1%), dug well water (1.1%), and buying water (2 households). Especially, 0.3% of households in Ward 4 used both of piped water and rain water.

Except for 0.6% of interviewees in Ward 2 who said that the pumped/ drilled water and the piped water were dirty; the other interviewees considered other sources of water for bathing and washing as average/ acceptable and good levels (Table 10).

Table 10: The main source of water for bathing & laundry and its quality

The main source of water for bathing and clothes washing	Dirty/ Poor	Average/ Acceptable	Good	Total
Rain water	-	1	3	4
Pumped/ drilled water	1	11	12	24
Buying water	-	2	-	2
Piped water	1	107	207	315 (90%)
Dug water	-	4	-	4
Rain water + piped water	-	-	1	1
Total (Percent)	**2 (0.6%)**	**125 (35.7%)**	**223 (63.7%)**	**350 (100%)**

In short, there are four main sources of water use in the four surveyed Wards; piped water, rain water, well water (pumped and dug well), pure water/ bottled water/ buying water. People mainly use piped water provided by Tra Vinh Water Supply and Drainage Company for cooking, drinking, bathing and washing that have ratios of 88.9%, 42.3% and 90% respectively. Regarding the quality of the sources of water, they are good and acceptable in general. However, through the FGD results in the Wards, the piped water was assessed as "good" but the quality was not high. 1,1% assessed that the piped water was too dirty to be used for cooking, 0.6% assessed the pure, bottled water was dirty for drinking and 0.6% reported that the well water and piped water were not good for bathing.

Payment for piped water each month

Regarding payment for piped water per month for those households connected to piped water system. Except for 4.3% of households which were not connected to piped water, the majority (80.6%) paid from 10,000 VND -< 100,000VND. However, there are some households paying 100,000VND or over (9.4%) and a few paying less than 10,000VND (5.4%).

The survey result on opinions of customers about the cost of piped water revealed that the payment was acceptable with 71% of interviewees answering that it was moderate. However, some households still said that it was rather expensive (13.4%) and expensive (10.4%). Very few interviewees (2.4%) thought it was cheap. 2.7% of interviewees either did not know or did not have any opinions.

Table 11: Payment for piped water per month for connected households

Payment for piped water/ month	Number	Percentage (%)
Not connected to piped water	15	4.3
<10,000 VND	19	5.4
10,000 - <20,000 VND	62	17.7
20,000 - <30,000 VND	62	17.7
30,000 - <50,000 VND	89	25.4
50,000 - <100,000 VND	69	19.7
100,000 or over	33	9.4
Do not know (because the wife pay for it)	1	0.3
Total	**350**	100.0

In short, the majority of those households connected to piped water paid on average from 10,000 VND up to less than 100,000VND (80.6%). 71% of customers assessed the payment was moderate and acceptable.

2. Sanitation/ Household Toilets

Results on household toilet shows that among 350 interviewed households, majority of households (94.6%) have in-house toilets and a few households (5.4%) do not have household toilets.

In-house toilets are of various types: septic tank toilets (90.6%), pit toilets (0.6%), toilets straight on sewage system (0.6%) and on river/pond (2.9%). Table 12 shows that those households with toilets to the river are in Ward 9, households with pit toilets and with toilets to the sewage system are in Ward 2 and Ward 4 and Ward 6.

Table 12: Toilet types

Toilet types	Ward 2	Ward 4	Ward 6	Ward 9	Total (Perc.)
Septic tanks	93	93	96	35	317 (90.6)
Pit toilets	1	1	-	-	2 (0.6)
Toilets straight on sewage system	1	-	1	-	2 (0.6)
Toilets straight on river/pond	-	-	-	10	10 (2.9)
Total (%.)	95	94	97	45	331 (94.6)

Many of the 317 households with septic tank toilets, only empty the tank whenever it is full (38.5%) or have never emptied it (25.6%). A small number of households empty the tank whenever it is blocked (7.9%) due to their using of a kind of chemical powder for autolysis or their new construction of toilets (7.9%). The rest of them answered that they empty the tank after 5-7 years or 10 years after using depending on the size of tank and the number of members in the households. Some others did not know.

Among the 19 households without toilets, 3 households dispose of human waste by storing it in a plastic bag and then throw it to the river, 3 households use neighbor's latrines, 6 households use the public toilet, and 7 households use fish pond toilet.

Answering about the toilet construction, 52.6% of them are willing to borrow money in order to build a sanitary household toilet (in which only one case expecting to share a toilet in common with one of the neighbors) meanwhile the other 47.4% of them did not want to borrow money.

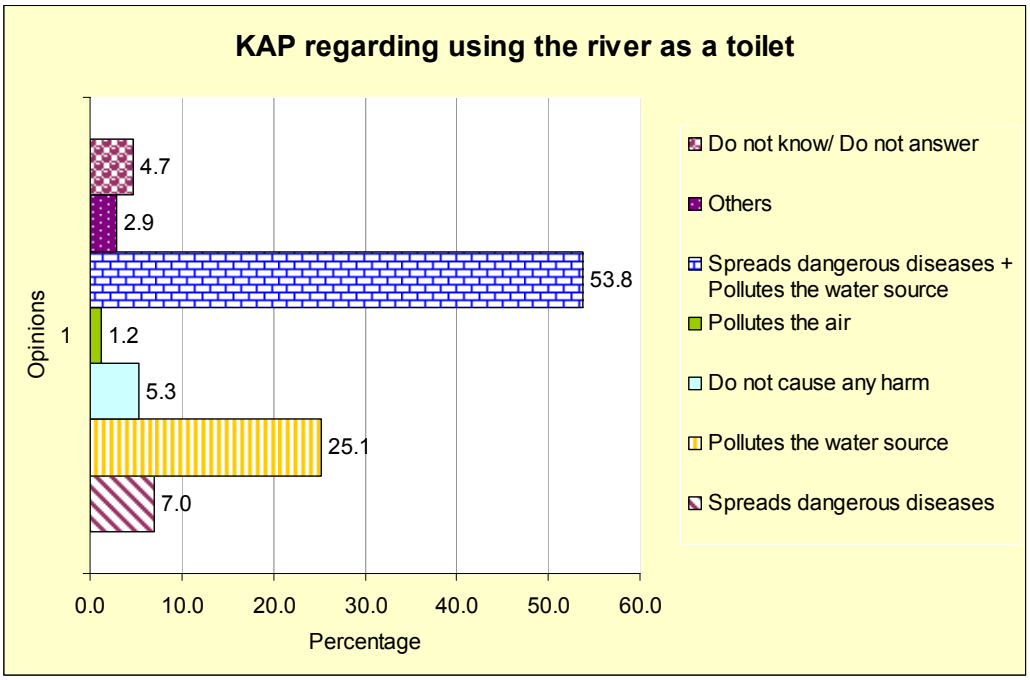
According to them, the reasons for borrowing money to build household toilets would be for health and environmental protection such as *"we also want to borrow money to have it hygienic, everyone wants to have clean environment, for preventing a polluted environment, making a good living without any environmental pollution, and for bringing good health to everybody"*. Some others are willing if *"favorable conditions are created for borrowing money"*, or *"seeing it is more convenient to have a household toilet".* In contrast, those interviewees who did not want to borrow money for household toilet construction gave reasons such as economic difficulties and felt that it was not necessary to borrow money because they were afraid they would be unable to pay back the debt:. *"Do not have money", "Do not want/ like to borrow the money" or "Can not borrow", "Building the household toilet whenever having money, we dare not borrow money", "The family is poor so can not afford to pay back", "If borrowing, having to worry about the money borrowed"*. Others are used to their old habit without seeing the important of keeping a clean environment: *"Not having any problem", "Being accustomed to going out, there are still many households who have household toilets now but they also continue to use the fish pond toilets"*.

Figure 2 below shows that only 53.8% of interviewees recognized the harmful effects such as spreading dangerous diseases and polluting the water source if using the river as a toilet. 5.3% of respondents even thought it did not cause any harm *"All waste water runs to the river, but thanks to the high and low tides nothing's the matter"*. Some others (2.9%)

answered that they only saw it dirty, not hygiene, polluted environment, or did not see so did not know.

Additionally, a few respondents who still use fish pond toilets did not see any negative impacts. According to some of them, *"knowing that it may influence the environment but also keeping fish in the pond, it may be more convenient if we build a household toilet but we are accustomed to using the fish pond toilet", "I have long since got used to the fish pond toilet", "The fish eat human waste in the pond and make the pond clean", "It only pollutes the air due to its not having any ebb and flow", "I think it is also polluted but only partly effect, it is not so serious", "Majority of people in this area have household toilets but they also use the fish pond toilet for fresh air, it is hot if using the household toilets"*.

Figure 2: KAP regarding environmental impact of using the river as a toilet.



Fish pond toilets

In short, 331 households (94.6%) have household toilets and 19 households (5.4%) do not. Households with no toilets; dispose of human waste by storing it in a plastic bag and then throw it into the river, use neighbor's latrines, public toilets, and fish pond toilets. Among them, 47.4% did not want to borrow money for various reasons such as economic difficulties, their feeling that it was not necessary to borrow money because of being afraid of their inability to pay back the debt, their being accustomed to using fish pond toilet so they did not

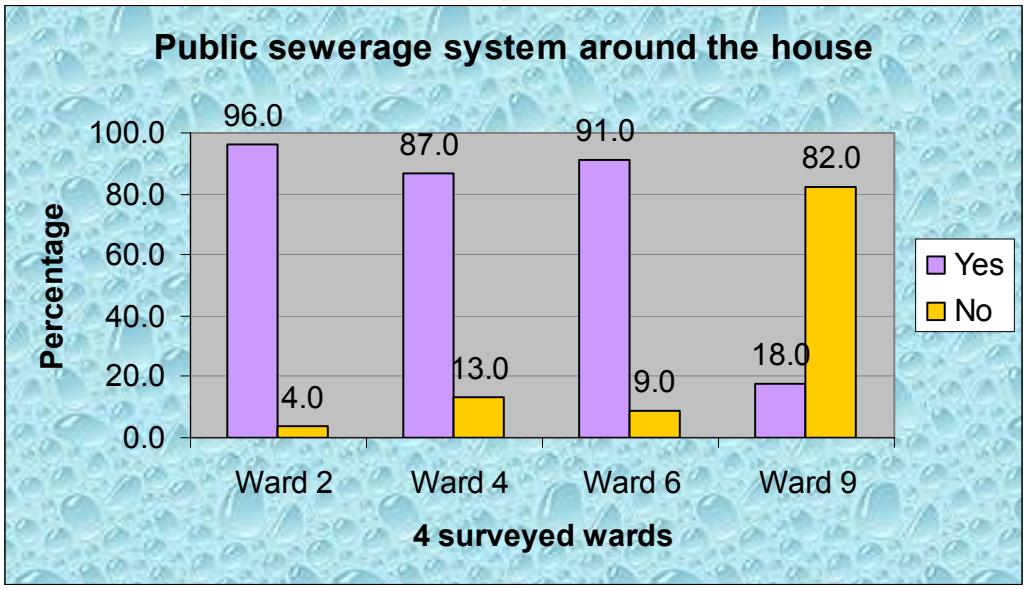
want to change the old habit or their not seeing the important of keeping a clean environment.

3. Waste Water/ Drainage

Among 350 households, 14.6% of opinions said that they do not have any source of waste water around their houses, 76% said that they had waste water from daily activities such as bathing, cleaning, washing around their houses or 9.4% of opinions were having some other sources of waste water such as from nearby hospital, construction, the nearby private seafood processing company, or from both of daily waste water and hospital, construction of neighbour and the market.

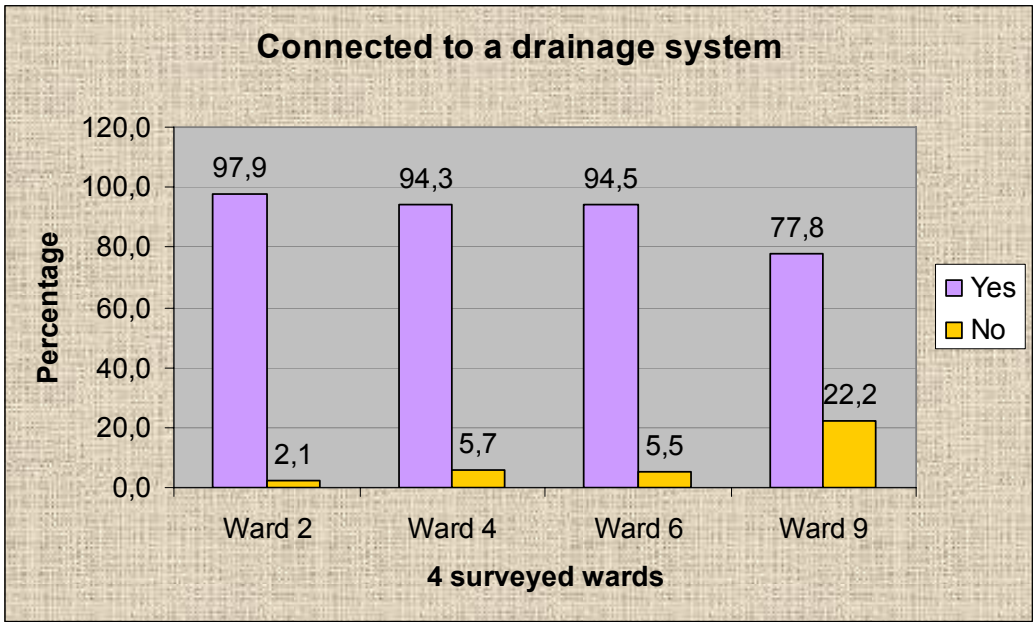
Regarding statements about a public sewerage system around interviewees' houses, 80.9% answered "yes, there is a public sewerage system around my house" and 19.1% of interviewees denied the existence of such a system around their houses. Details of the sewerage system existence surveyed ward-wise are as follows,

Figure 3: The public sewerage system around the house



Among those 283 households connected to the public sewerage system, there are 269 households (95.1%) connected to the drainage system and 14 households (4.9%) not connected to the system. A large number of those households not connected live in Ward 9 which is one of the outer Wards of Tra Vinh Town and whilst not in the project area could possibly be included in a future expansion of WWM. The specific geography of the Ward is characterized by low land and a lack of dykes so it floods frequently during the rainy season and flood-tides (high tides). The household waste water flows freely across the ground to evaporate or to be absorbed in the soil.

Figure 4: Connection from a house to a drainage system



Relating to the types of drainage system, results from 269 households connected to the drainage system showed that 71.4% (192/ 269) of the households have covered drains, 16.4% (44/ 269) of the households have open drains, 11.2% (30/269) of the households have drain leading to a pond/ canal/ garden and the rest of them 1.1% (3/269) have both of the open and covered drain or covered drain and drain leading to pond/ canal.

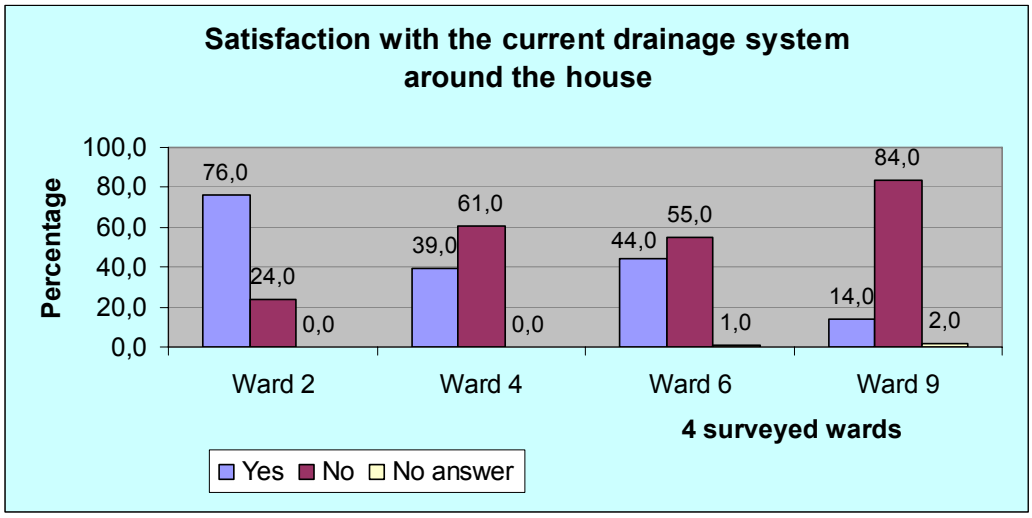
With regard to the length of time they had been connected, most of the 269 households connected to the drainage system did not know or did not respond, except for 3.7% (10 households). Most households (84%, 226 households) have been connected to the system for more than 3 years, 10.4% (28 households) connected from 1-3 years, 1.9% (5 households) connected less than 1 year.

Satisfaction with the current drainage situation around the home

As regards the customers' satisfaction level, the survey revealed the following:

While 52% (182/ 350 interviewees) were not satisfied with the current drainage around their home, 47.4% (166/ 350 interviewees) were satisfied with the drainage situation. 0.6% (2/ 350 interviewees) did not answer/ had no opinion. Similar to the result on public drainage system, Ward 9 lacks a drainage system so dissatisfied house-holders make up a higher ratio of respondents. Details of each Ward are as follows:

Figure 5: Satisfaction with the current drainage situation at the home/ street



Those interviewees satisfied with the drainage situation expressed some of the following opinions: good drainage, clear drains, the street has been done so it is clean, clean and not stagnant, it is just so-so and not too bad (Ward 2), good drainage system, not flooding, not causing any pollution, good environmental sanitation (Ward 4), it is normal/ alright, not dirty, not flooding, everyone is aware of maintaining, hygiene, good drainage to the river, satisfied but it needs to be improved more for better drainage (Ward 6), satisfied with the underground drainage system, there is nothing happened, every households also keep it clean, the households have large area of land absorbed waste water without any flooding or stagnant (Ward 9).

However, those interviewees dissatisfied with the drainage system make up a higher ratio than those who were satisfied for reasons such as; the drainage system is too small/ not good/ too bad, the flow of drainage being too slow causing stagnant/ flooding and muddy during the rainy season, especially during heavy rain, not seeing any person-in-charge for dredging, the waste water flow freely from the house to the ground at the rear of the house or to the pond at the rear of the next-door neighbour's house, or through the drainage ditches to the river but it still stagnant causing lack of hygiene (Ward 2), waste water flowing to the ground/ garden at the rear of the houses, there being no sullage pit, causing flooding the street during the rainy season/ heavy rain.

"Oh, my Gosh, I could not stand it, it has a bad smell during the hot season, stagnant and flooding during the rainy season" (Ward 4), small size of sullage pits, slow drainage and stagnant water accumulating when it rains, very polluted, flooding and the waste water had black colour and bad smell, during the rain, waste water from the market flows and spreads to the street (Ward 6), flooding during the rainy season (Ward 9).

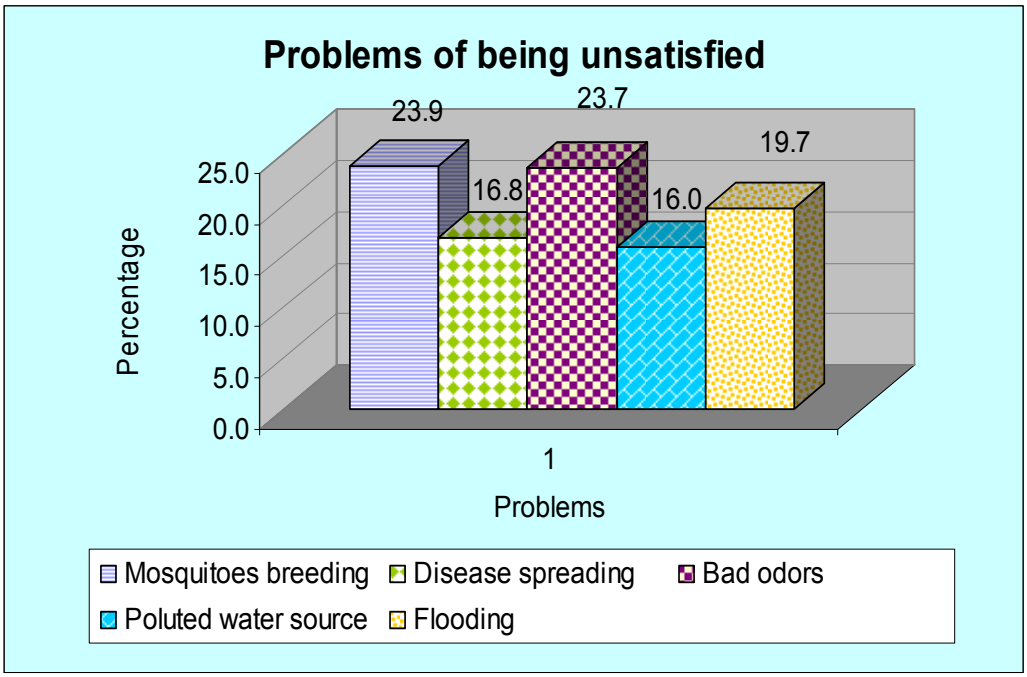
From the focus group discussions, it also revealed the same results. Mentioning the drainage system in the area, majority of participants in the FGD responded that except the sullage pits, there is not any drainage system for waste water treatment before flowing to the river. Most waste water flows from the households to the public drainage system along the main road. In reality, it stagnates and floods during the rainy season and floods due to the incomplete/ small sized sullage pits compared with the increasing population and overcrowding. Another reason is due to the lack of rubbish bins, people drop their solid waste into the uncovered drains, causing water to stagnate, mainly where the small sullage pits join to the main pipes – it is an inter-wards system. One more important cause is the fact that *some households take advantage of the front side in the main street/ road to construct their houses over the sullage*

pits making it impossible to conduct dredging/ empty the drains therefore leading it to flood, smell bad and look dirty.

In those areas not having a drainage system, waste water flows to the nearby ponds/ holes dug by the households or freely into the ground where the water is gradually absorbed. Those households near the rice fields let their waste water flow into the fields/ ponds/ ditches but during the rain or flood tides, the waste water/ dirty water flood the houses due to the lack of drainage.

Results regarding awareness also showed that low rates of people know about environmental sanitation matters: only around 17 % identified “disease spreads”, only 16 % “water sources are polluted”.

Figure 6: Problems of being unsatisfied



Waste water flows from the households to the drain

Small size of sullage pits/ drains in the alleys

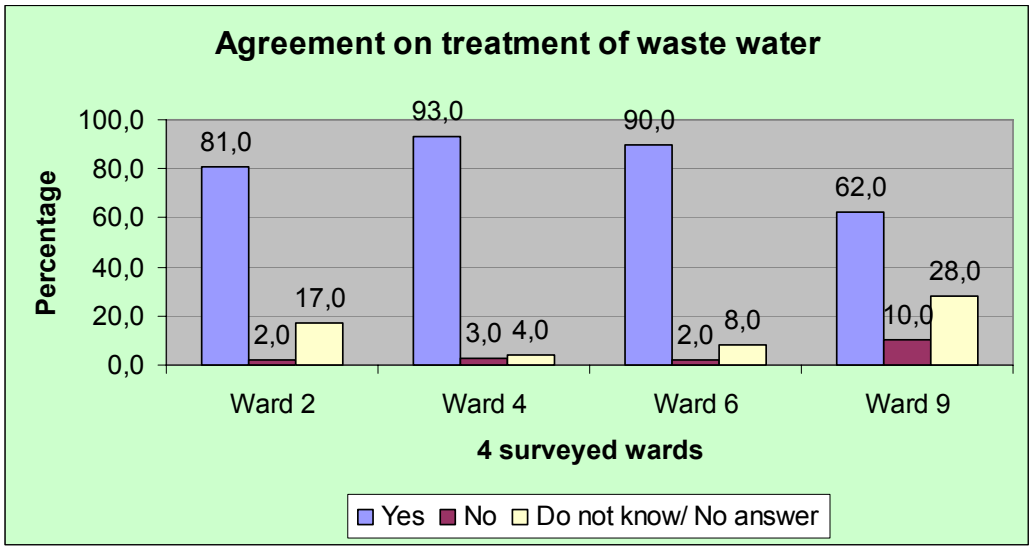
Dropping of solid waste to the ditch/pond/ uncovered drainage

Waste water flows freely to the ground/ the nearby pond

Agreement on the treatment of waste water

Being asked “As a general principle, do you agree that waste water should be treated (cleaned) before it returns to the river or sea?”, 84.3% (295/350) of interviewees answered “yes”, only 3.4% (12/350) of interviewees answered “no”, and 12.3% (43/350) interviewees did not know or did not answer the question. Details of 4 surveyed wards are as follows:

Figure 7: Agreed that waste water should be treated



According to the those agreements on waste water treatment, they agreed that it was good/ very good/ clean if waste water could / should be treated in order to reduce pollution and promote environmental sanitation *"It should be treated to; promote cleanliness, avoid bad smells, reduce mosquitoes breeding and minimize environmental pollution which affects those people living near the river", "It requires a sullage pit on the main road and should have a system for waste water treatment".*

Those disagreeing about waste water treatment give the following reasons*: "It is not polluted because the waste water is only from daily activities in the house without from industrial zone", "Let the waste water flow freely and it will be absorbed into the ground", "Such thing is alright, but there is no place for treatment", "It is required indeed but there is no condition for treatment and the household only wastes water from the daily activities".*

Those who gave no answer or no response are unaware or careless or have low expectations and rely on the government: *"Not yet heard anything", "Not being used so could not imagine", "Let it flow freely to the river", or "Do not know, it is the matter of government and up to them, just do it and we will see if it is convenient".*

Payment for waste water treatment

Household interview results showed that 77.7% (272 opinions) of the households are willing to pay for waste water treatment, 3.4% (12 opinions) do not agree to pay and the rest do not know or refuse to response. According to them, they are willing because the environment will be improved without any pollution, diseases for a green, clean, hygiene, unpolluted environment/ source of water use as well as for a better health/ life of everybody and environmental sanitation for society. People are willing to pay because they see the benefits of themselves and their responsibility: *"Willing if finding it good", "People have to pay, everybody has to contribute due to common/ public responsibility to the environment for a clean and better environment and community health".* In fact, conversely interviewees also required that they only paid *"upon condition that the waste water is treated properly and drains more clearly in than the current situation"*. However, in some opinions, people also revealed their worry about the cost of payment for waste water treatment: *"Willing to pay due to the really bad quality of current situation but want to pay in accordance with our capacity", "but we do not know how much to pay for it", "but the price must be reasonable and within our own capacity to pay".* Some people are up to majority, *"Following the crowd, making decision according to majority, paying if everybody pays, if paying a little because not being*

afford to pay too much". Some others depend on decision of the government, *"If the government requires/ fix the price to pay", "According to the regulation/ rule of the government but the price must be reasonable to the people".*

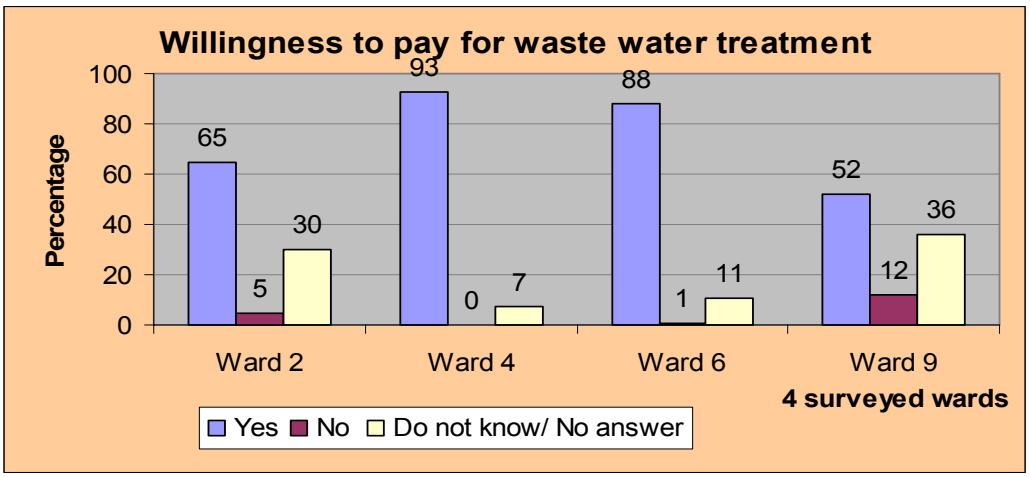
Results from FGD also showed that a majority of participants thought payment for waste water treatment was necessary bit helps because it would help the local people to have a better, more developed and healthier life.

However, according to them there should be a common agreement on the price of payment which is due to the decision-making of the Ward leaders based on the incomes and contribution capacity of each household and it needs to have a good consciousness of everybody. *"Everybody will also contribute if the price for waste water treatment is not too high compared to the price of water use and such price should be based on the real volume of water used of each household".*

One woman in the FGD in Ward 9 said: *"It would be very good if there is a drainage system and waste water treatment; it will help everyone protect themselves from some diseases and also make a better environment so they will contribute/ participate and be willing to pay for it. But it is only that we hope the price will be reasonable to the people living in the remote area, etc."*

With regard to those interviewees who were not willing to pay for waste water treatment due to their low awareness, low incomes, concerns about the price, dependent attitude on the government: *"It is no problem because recently people do not use river water anymore; Family income is still low, unaffordable due to the situation of family income; Not knowing the price; The government has to take charge; it must invest and bear the cost of waste water treatment".*

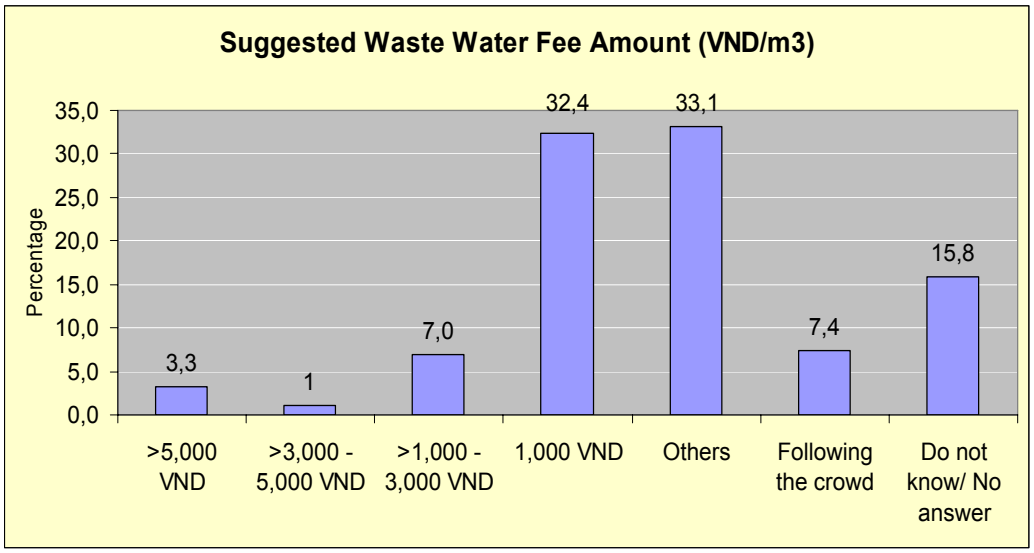
Figure 8: Willingness to pay for waste water treatment



Regarding the price of payment, a relative majority of opinions suggested the cost of payment/ contribution should be 1,000 VND/m^3 making up 32.4% (88/272) and 11.4% (31/272) of opinions agreed to pay >1,000VND – 5,000VND/m^3, and others making up 33.1% (90/272) which is a variety of opinions.

Most opinions supposed that the price should be considered and fixed by the government at a rate which is reasonable and suitable for family incomes/ suitable to the local situation. Some interviewees suggested the price should be 1% - 10%, even 20% of the total payment for water used or from one-third (1/3) to half (½) of water price, from 200-300VND/ m^3. Some others suggested that it should be collected as monthly fixed costs of monthly solid waste collection which costs 6,000 VND/ month. Below is suggested price that customers in the 4 surveyed Wards are willing to pay for waste water treatment per m^3.

Figure 9: Customer's willingness to pay for waste water treatment per m3



Regarding the public sewerage system, 76% of respondents experience waste water discharge from daily activities such as bathing, cleaning, washing etc, around their houses. 80.9% of interviewees answered "yes", having public sewerage system near the houses. Among them, 95.1% connected to the drainage system and 4.9% not connected to the system. Majority of those households (84%) had been connected for more than 3 years. A large number of those households not connected were in Ward 9 –a neighboring Ward to the Project where because of low land, the household waste water flows freely and evaporates and/or is absorbed into the ground. 71.4% of the households have covered drains.

- With regards to satisfaction about the surrounding drainage system, the ratio of unsatisfied households (52%) is higher than those satisfied households (47.7%). Ward 9 has a lack of drainage system so those households did not satisfy make up a high ratio. Those interviewees did not satisfy with the drainage system due to some reasons such as the drainage system is small/ not good or too bad, the flow of drainage is slow causing stagnant/ flooding and muddy during the rainy season, especially during heavy rain, etc.
- Results on awareness also proved that low rate of people knowing of the environmental sanitation matter: only around 17 % identified "disease spreading", only 16 % "polluted water source".
- With regards to agreement on the treatment of waste water, being clear awareness on the matter of drainage, 84.3% agree that waste water should be treated (cleaned) to prevent pollution as well as to ensure good environmental sanitation. In fact, there are still 3.4% did not agree, and 12.3% do not know or not answer the question. The reasons of having no answer or no response are due to the lack of awareness or not being care or having expectation and relying on the government.
- With regards to payment for waste water treatment, 77.7% are willing to pay for waste water treatment because the environment will be improved without any pollution, diseases for a green, clean, hygiene, unpolluted environment/ source of water use as well as for a better health/ life of everybody and environmental sanitation for society. Among them, 32.4% suggested that the cost of payment/ contribution should be 1,000 VND/ m3/month. In reality, there are still 3.4% not agreeing due to low awareness, low incomes and worry of the payment so these *interviewees depend on the government decision.*

4. Solid Waste

Use of solid waste collection service

There is a public solid waste collection service in the surveyed Wards. However, the routes of the provided service still do not cover the whole residential areas in the four Wards. Among 350 interviewed households, 77.4% (271/350) of the surveyed households use local solid waste collection service and 22.6% (79/350) of the surveyed households do not use such service. Detail of each Ward is as follows,

Figure 10: The use of solid waste collection service

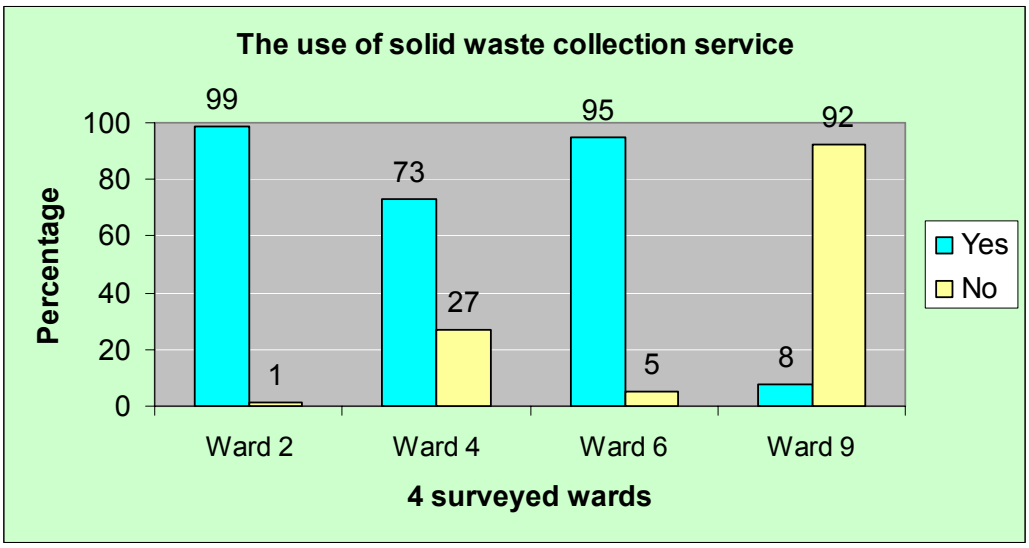


Figure 10 above displays a high ratio of households not using the solid waste collection service in Ward 9 (92%) and in Ward 4 (27%). The leader of Ward 9 said that the environmental sanitation in the Ward is not really good. It is because people throw the garbage into the river and often disposed of the waste by burning, leaving for self-destroy, or burying in the rainy season. Leader of Ward 4 told that there was the service provided in some streets, and not yet provided in some small streets which were far from the main road so the people throw the waste freely. Those people living near the river or canal often throw their waste into the river.

Frequency of solid waste collection by the service

With regard to the frequency of solid waste collection, there are 95.2% (258/271) of households using the local solid waste collection service had the solid waste collected every day, 3.3% (9/271) had the waste collected 2-3 times per week, one Hh had it collected once per week, and one Hh stated it did not know the collection frequency. Besides, two other households throw their solid waste in the empty ground near their house because the rubbish bin was put far from their home.

Table 13: Frequency of solid waste collection

Frequency of collection	Ward 2	Ward 4	Ward 6	Ward 9	Total	Percent
Everyday	93	69	93	3	**258**	**95.2**
2 - 3 times/ week	5	2	1	1	**9**	**3.3**
Once/ week	0	1	0	0	**1**	**0.4**
Others	1	0	1	0	**2**	**0.7**
Do not know/ No answer	0	1	0	0	**1**	**0.4**
Total	**99**	**73**	**94**	**4**	**271**	**100.0**

Payment for solid waste collection service per month

Majority of the households paid for solid waste collection service less than 10,000 VND per month 71.2% (193/ 271 households), and from 10,000 – less than 20,000 VND per month 9.5% (26/ 271 households). Particularly, 1.1% (3 households) paid in a high range of between 20,000 – less than 30,000 VND.

In addition, 15.8% (43/ 271 households) paid nothing, 1.1% (3/271 households) responded that there was nobody to collect the money. 1/ 271 household was poor so did not have to pay for using the service and 2/ 271 households did not know.

Table 14: Monthly payment for solid waste collection service

Monthly payment for collection	Ward 2	Ward 4	Ward 6	Ward 9	Total	Percent
Pay nothing	6	9	27	1	**43**	**15.8**
<10,000 VND	65	62	63	3	**193**	**71.2**
10,000 - <20,000 VND	25	1	0	0	**26**	**9.5**
20,000 - <30,000 VND	2	0	1	0	**3**	**1.2**
No one collected	0	0	3	0	**3**	**1.2**
Do not know/ No answer	1	1	0	0	**2**	**0.7**
Poor households do not pay for collection	0	0	1	0	**1**	**0.4**
Total	**99**	**73**	**95**	**4**	**271**	**100.0**

Garbage disposal of those households not using the solid waste collection service

For the 22.5% (79/350) of households not using the solid waste collection service, the most popular ways of garbage disposal is burning 50.6% (40/79 including 31 households in Ward 9 and 9 households in Ward 4) and 15.1% (12/79 households) using the waste collection

service without any paying “do rac ke” which means they put their solid waste in the rubbish bin of the neighbour who paid the fees. The rest of them (mainly concentrating in Ward 4 and Ward 9) dispose the garbage by burying, throwing to the field, river, ditch or any empty plot of land.

Burning or throwing the solid waste to any empty plot of land or canal

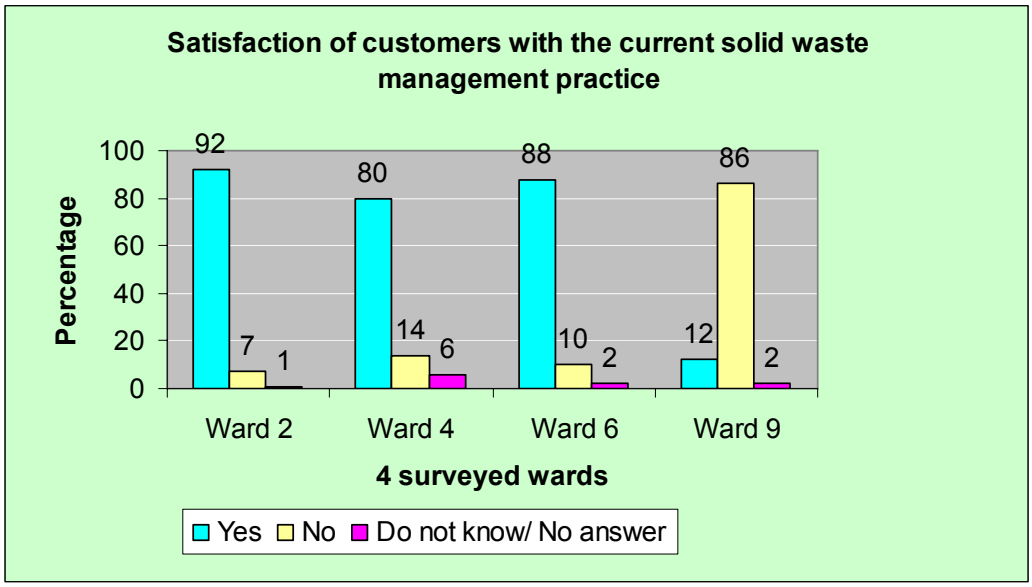
Methods of garbage disposal during the rainy season or flooding

Among 79 households not using the solid waste collection service, there are only 10.1% (8 households) answered that they changed their garbage disposal methods during the rainy season or during flooding, the rest of them 89.9% (71 households) did not change. The most popular changed method is digging a pit, hole to throw the waste and then cover it (5 households). Another way is throwing solid wastes into the dry well or throwing to a pond, gathering them to a high plot of land during the rainy season and burning them in the dry season.

Satisfaction with the solid waste collection service

Figures below showed that majority of interviewees making up 76% (266/350 households) were satisfied with the current solid waste collection management. However, 21.1% (74/350 households) were not satisfied with the solid waste collection service. Similar to the results on the use of solid waste collection service and garbage disposal, dissatisfied householders make up higher ratios in Ward 9 (86%) and Ward 4 (14%).

Figure 11: Satisfaction of customers with solid waste management practice.



Those interviewees dissatisfied with the service suggested improving the problems on flies (38 opinions), water pollution (37 opinions), bad smell (34 opinions) and hygiene problems (41 opinions). Besides, a few interviewees also faced with the problems on frequency of solid waste collection service (17 opinions), blocked/ choked drain (3 opinions).

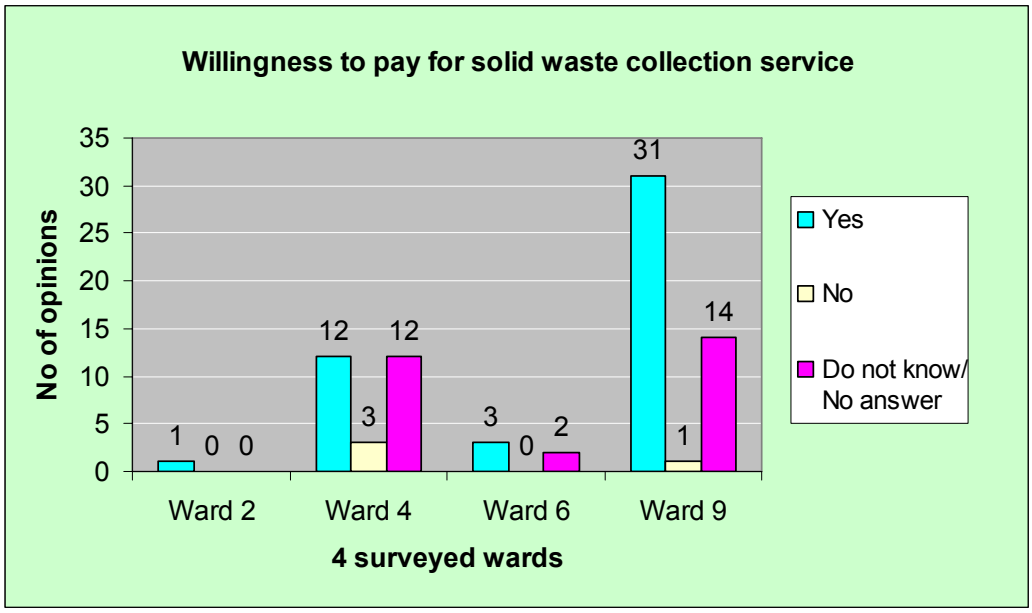
In FGD, people indicted that they were not satisfied with the environmental sanitation and solid waste problems in the area. According to them, those lanes/ alleys which are further from the main road are still not equipped with rubbish bins, and people still drop garbage on the road/ street even in those places served by the solid waste collection service. Some other opinions supposed that the solid waste collection service only served those households located along the main street meanwhile the other households which are further from the main street often collect the garbage/ rubbish and burn in the dry season and bury in the hole in the rainy season. People are not satisfied because in their opinions, if the solid waste could be self-destroyed if being bury but it will absorb to the ground and causing polluted and nowadays some kinds of plastic bags could not be self-destroyed.

Willingness to pay for improved solid waste collection service

As for 22.5% (79 households) not using the solid waste collection service and thus did not pay until now, 59.4% (47/79) were willing to pay for the improved service, 0.5% (4/79) were not. 35.4% (28/79) did not know/ answer.

Regarding the cost of payment for the solid waste collection service, 78.7% (37/47 households) were willing to pay less than 10,000VND/ month, each 2.1% (1/47 households) agreed to pay 10,000 - <20,000VND/ month or more than 20,000VND/ month, 4.26% (2/47 households) want to follow the crowd. The rest of them did not know or just opted individually for other sums.

Figure 12: Willingness to pay for the solid waste collection service



In general, there is public solid waste collection service in the surveyed Ward. However, the routes of the provided service still do not cover the whole resident areas in the 4 Wards. Among 350 interviewed households, 77.4% of the surveyed households use local solid waste collection service. Among 22.6% (79/350) of the surveyed households do not use such service; there are high ratios of households not using the solid waste collection service in Ward 9 (92%) and in Ward 4 (27%). The leader of Ward 9 assessed that the situation on environmental sanitation in the Ward is not really good. It is because previously people threw the garbage to the river and they often disposed the waste by burning, leaving for self-destroy, or burying in the rainy season. Leader of Ward 4 told that there was the service provided in some streets, and not yet provided in some small streets which were far from the main road so the people throw the waste freely. Especially those people living near the river or canal throw their waste to the river.

- With regards to garbage disposal of those households not using the solid waste collection service, among 22.5% (79/350 households) not using the solid waste collection service, the most popular ways of garbage disposal is burning 50.6% (40/79) and 15.1% (12/79) using the waste collection service without any paying “do rac ke” which means they put their solid waste to the rubbish bin of the neighbourhood who paid the fees. The rest of them (mainly concentrating in Ward 4 and Ward 9) dispose the garbage by burying, throwing to the field, river, ditch or any empty plot of land. Majority 89.9% (71/79) did not change their garbage disposal methods during the rainy season or during flooding. They dig a pit or hole to throw the waste and then cover it. Another way is throwing solid wastes into the dry well or throwing to a pond, gathering them to a high plot of land during the rainy season and burning them in the dry season.
- Some people have a low awareness level and continue to either throw garbage into the river or in some areas which *are near the canals, rivers or in the alleys.*
- With regards to frequency of solid waste collection by the service, 95.2% remarked that solid waste was collected every day. 71.2% paid for solid waste collection service less than 10,000 VND per month.
- With regards to satisfaction with the solid waste collection service, 76% were satisfied with the current solid waste collection management, 21.1% were not satisfied with the solid waste collection. Similar to the results on the use of solid waste collection service

and garbage disposal, the number of households being unsatisfied makes up high ratios in Ward 9 (86%) and Ward 4 (14%).

- With regards to willingness to pay for solid waste collection service, among 22.5% (79 households) not using the solid waste collection service, 59.4% were willing to pay for the service. Regarding the cost of payment for the solid waste collection service, majority (78.7%) of them were willing to pay less than 10,000VND/ month.

Suggestions for the improvement of the existing solid waste management problems

Due to the current problems on solid waste management in the Wards, interviewees suggested some solutions for improvement such as needs on more public garbage bin, more solid waster collectors/ collection service in the remote alleys from the roads, or more punctual, tidy, frequent and carefully. Besides, according to them, the local people also should be raised awareness on sanitation waste management and public hygiene and some poor households should have consideration on payment for the service. Below is detail of those opinions.

- More public rubbish bins need to be provided along the streets/ alleys to have better looking and cleaner streets (6 opinions in Ward 2, 3 opinions in Ward 4, 3 opinions in Ward 6).
- More solid waste collectors in the alleys/ providing an at-home collection service throughout the Wards (16 opinions in Ward 4, 3 opinions in Ward 6)
- Solid waste should be collected on time/ punctually, tidily and carefully (1 opinion in Ward 4, 2 opinion in Ward 6) and more frequent (twice/ day) (1 opinion in Ward 6).
- Solid waste should be gathered and disposed of properly (1 opinion in Ward 2).
- More IEC campaigns should be conducted to raise awareness on solid waste/ garbage management and public hygiene to counter local peoples' lack of awareness on sanitation, (6 opinions in Ward 2, 1 opinion in Ward 4, 1 opinion in Ward 6, 3 opinions in Ward 9), on how to dispose garbage in the right/ suitable place (4 opinions in Ward 2).
- Poor families should be free-of-charge or have remission for using waste collection service (2 opinions in Ward 9).
- Solid waste disposed by/ in the area of the hospital should be managed well due to its influence to the nearby people (2 opinions in Ward 6).

IV. INFORMATION, EDUCATION, AND COMMUNICATION PRACTICE

This part revealed information on the existing information-education-communication activities (IEC activities) related to piped water, waste water and sanitation in the surveyed site. Then the findings on the most effective means for carrying out the IEC practice within the community.

1. The Current IEC Activities of the Wards on Water Supply and Wastewater

From in-depth interview with the Ward leaders, most Wards communicate to the local people through the loudspeaker system. The Leader of Ward 2 said that currently the Ward primarily informed the people through the loud speakers and/or community meetings in each area. Loudspeakers often start broadcasting at 5 am and 5.30pm with a time limit of 30-45 minute each day depending on the requirement of each issue. Leader of Ward 4 said that they launch the campaigns directly to each household and hold meetings in the same area. According to the leader of Ward 6, they mobilize the local people through the activities of groups such as women group of Women's Union (savings and credit group of women), Youth Union and Party cell of the area.

In addition, according to leader of Ward 9, they disseminate information by loudspeaker but it is only a formality because there are many Khmer in the Ward meanwhile the content of broadcasting is in Vietnamese language so Khmer people do not understand (in his term *"In many cases, they do not even understand direct speech, let alone the loudspeaker").*

In addition, communication is also carried out through the neighbourhood (to dan pho) meetings in each area (every month, the Ward organize 2 batches of propaganda in 2 temples/pagoda because majority of people are Buddhist so they usually go to the pagoda during the full moon), through the party (MOs staff often propagandize at the relatives meeting on the night before the wedding), open meeting and by mouth (mouth-to-mouth). All of these IEC activities are combined and incorporated with the activities of the Ward branch and MOs (considered as "centipede-foot-shaped network" in the community).

Comments on the effectiveness of communication in the Ward, leader of Ward 2, 6, and 9 remarked that it was effective, after the campaign, local people had a better awareness and reminded each other to preserve environment.

Regarding the effectiveness of loud speakers, the local people also pay attention to listen which proved by the fact that each time if there is any loudspeaker damaged at any area, the local people also informed the Ward to repair it (Ward 2). However, leaders of Ward 4 revealed that it was not effective because the people also threw garbage in the street not the rubbish bins provided, only some meters away "*having the bin but without using it*".

Dropping the garbage next to the public rubbish bins/ in the alley

Besides, the fact that some of the local people do not have high awareness relates to the difference customs, and daily habits of living as well as cultural/ intellectual standards and level of interest of the people. Remarks by representatives of the Ethnic Committee show that those households that have good levels of consciousness are very interested in the practice of environmental sanitation and protection. The Khmer live in kin relationships (gieng dong) and generally do not have toilets. Whilst the Khmer seem to have a lower level of awareness and it appears that the environmental sanitation communications do not have much effect it might also be that the Khmer are not listening to the messages because they have no toilets, drains or solid waste collection and therefore cannot change their behaviour. In addition, the people are poorer and focus on their immediate and concrete needs, worrying about the food to eat and clothes to wear first.

Therefore, the current IEC activities required that it should be practical, related to effect of their production and the daily living quality of local people.

In short, according to leaders of the surveyed Wards, IEC activities are directed primarily through; loudspeakers; community, area, group and open meetings and home visits. In fact

however, there are still some local people who lack awareness on sanitation and waste disposal. This could be explained that it is due to the lack of infra structure, poverty and differences in custom and habit of living as well as cultural/intellectual standard and interest of people.

2. Received Information regarding Piped Water, Wastewater and Sanitation

Levels of interviewees receiving information regarding piped water, waste water and sanitation during the last six months are still low showing that there is a lack of IEC practice: 80.8% of respondents had not received information on piped water, 90% of respondents had not received information on waste water, and 90.5% of respondents had not received information on sanitation. Details are as follows,

Table 15: Information received during the past six months

Issues	Response	Ward 2	Ward 4	Ward 6	Ward 9	Number	Percentage (%)
Piped Water	Yes	19	20	9	10	58	16.9
	No	75	77	88	37	277	80.8
	Do not know/ no answer	4	2	1	1	8	2.3
	Total	**98**	**99**	**98**	**48**	**343**	**100**
Waste Water	Yes	10	8	2	6	26	7.6
	No	84	89	97	37	307	90
	Do not know/ no answer	4	3	0	1	8	2.3
	Total	**98**	**100**	**99**	**44**	**341**	**100**
Sanitation	Yes	9	5	4	5	23	6.8
	No	84	91	94	35	304	90.5
	Do not know/ no answer	4	3	1	1	9	2.7
	Total	**97**	**99**	**99**	**41**	**336**	**100**

Regarding the kind of received information on waste water, 21.3% (10/47) responses of receiving information on rights with regard to waste water disposal, 14.9% (7/47) responses of receiving information on duties with regard to waste water disposal, 8.5% (4/47) responses of receiving information on both rights and duties with regard to waste water disposal, 4.3% (2/47) responses of receiving information on free installment of water meter and 51.1% (24/47) responses of having other information.

Frequency information was received

The frequency of information received on piped water, waste water and sanitation is at most once (45.3%) during the past six months. The most frequency of information received is the information on piped water.

Table 16: Frequency of receiving information

Frequency	Piped water	Waste water	Sanitation	Total	Percent
1 time	30	10	8	**48**	45.3
2 - 3 times	14	11	6	**31**	29.2
4 - 5 times	11	0	3	**14**	13.2
> 5 times	4	2	2	**8**	7.5
Do not know	1	2	2	**5**	4.7
Total	**60**	**25**	**21**	**106**	**100.0**

Sources of received information

From household visits and interviews, the most frequent sources of information reported by interviewees are television (27.5%), neighbors/ friends/ relatives (25%) and respected person in the community/ Ward (12.5%).

Table 17: Sources of received information

Sources of received information	Ward 2	Ward 4	Ward 6	Ward 9	Total	Percent
Neighbors/ Friends/ Relatives	8	13	7	2	**30**	25
Water Supply and Drainage Company	4	3	-	1	**8**	6.7
Health Communicator/ Volunteer	1	2	-	-	**3**	2.5
Respected person in the community/ Ward	4	8	-	3	**15**	12.5
Television	7	13	6	7	**33**	27.5
Radio	3	1	2	2	**8**	6.7
Newspaper	2	3	2	2	**9**	7.5
Loud Speaker	2	6	1	3	**12**	10.0
Member of Mass Organization	-	1	1	-	**2**	1.7
Total	**31**	**50**	**19**	**20**	**120**	**100.0**

The most influential person to communicate information regarding water, waste water, sanitation

Related to the IEC activities in the Ward, the local authority launched the movement through the MOs to combine with the other programs for propaganda. There was a cooperation of MOs at the Ward level (Youth Union, Women's Union, Red Cross Association and Health Station) and the head of neighbourhood and the areas at the community level to communicate information regarding clean water in the weekly/ monthly meetings. The communicator is usually the Ward staff.

Relevant to the FGDs results, household interviews showed that the most influential persons for providing information communication are Ward leaders (41.1%). Then another person is representative of the Company (19.1%), respected person (15.1%) and head of the area (truong khom, 12.6%). Besides, there are still 19.1% interviewees answered that there was not anyone or they did not know (Table 18).

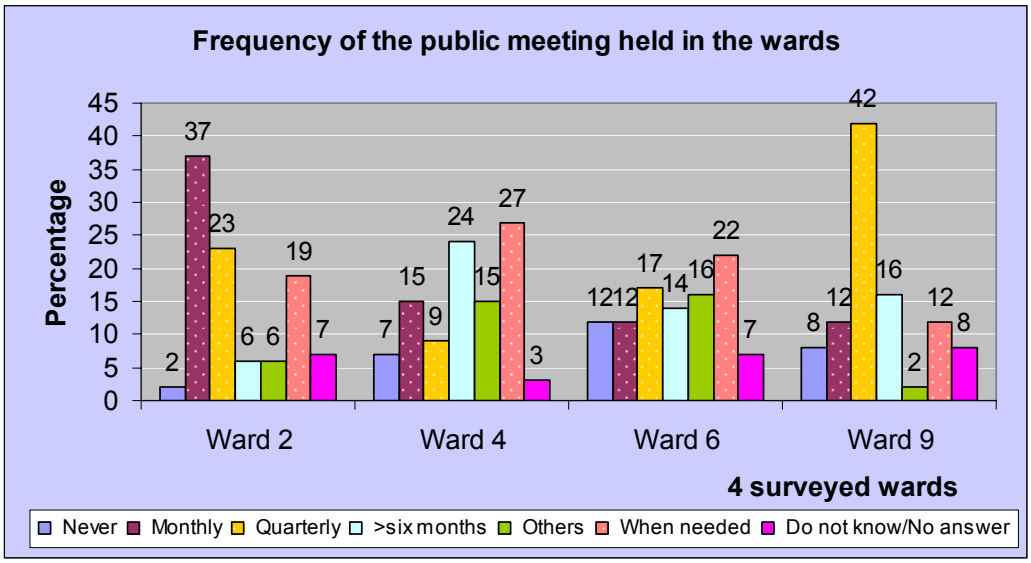
Table 18: The most influential person for communicating information

The most influential person for IEC activities	Ward 2	Ward 4	Ward 6	Ward 9	Total	Percent
Ward leader	37	66	25	16	**144**	41.1
Representative of the Company	15	40	6	6	**67**	19.1
Health Worker	3	3	4	3	**13**	3.7
Member of Women's Union	5	8	4	6	**23**	6.6
Respected person	7	30	14	2	**53**	15.1
Head of the area (khom)	1	7	31	5	**44**	12.6
Whoever	4	1	-	-	**5**	1.4
Others	8	1	7	2	**18**	5.1
Not anyone/Do not know	33	4	17	13	**67**	19.1

Frequency of the public meetings held in the Ward

The most frequency of the public meetings held in the 4 Wards is monthly and quarterly. Beside the most number of interviewees said the public meeting held when needed 21.1% (74/350), majority of interviewees in the 4 surveyed Wards responded that the public meetings held monthly 20% (70/ 350), quarterly 20% (70/ 350), and more than each six months 14.9% (52/350). If compared the 4 Wards, Ward 2 had the most frequency of the public meeting held. In Ward 2, most interviewees had the monthly 37% (37/100) and quarterly public meeting 23% (23/100). In Ward 6 and Ward 9 most interviewees had the quarterly public meetings 17% and 42% (respectively 17/100 and 21/50). In Ward 4, most interviewees had the meetings more than 6 months 24% (24/100).

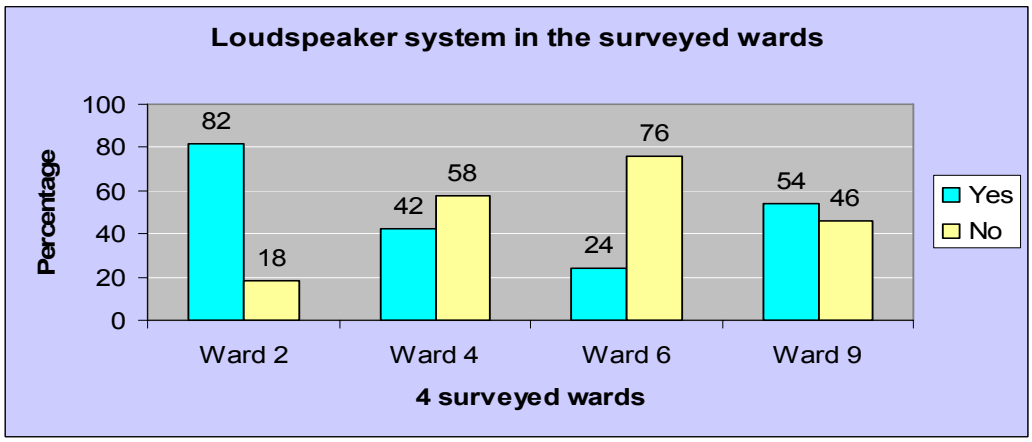
Figure 13: Frequency of the public meetings held in the four surveyed wards



Loudspeaker system in the Wards

The loudspeaker system is not equally available among the 4 Wards. Ward 2 and Ward 9 have more loudspeakers (82% and 54% of the households respectively) than those in Ward 4 and Ward 6 (42% and 24% respectively).

Figure 13: Existing loudspeaker system in the surveyed wards



Answering the question of the most suitable time for broadcasting the news and information from the loudspeakers, almost interviewees responded that in the morning 50.2% (108/ 215 opinions) or in the morning and at noon/ afternoon/ late afternoon 39% (84/ 215 opinions).

In short, levels of interviewees receiving information regarding piped water, waste water and sanitation during the last six months are still low showing that there is a lack of IEC practice: roughly between 80.8% and 90.5% report not having received any information on aforementioned issues in the last six months.

- With regard to frequency of information received, time of receiving the sparse information on piped water, waste water and sanitation is at most only once (45.3%) during the past six months. The most frequent information received is information on piped water.

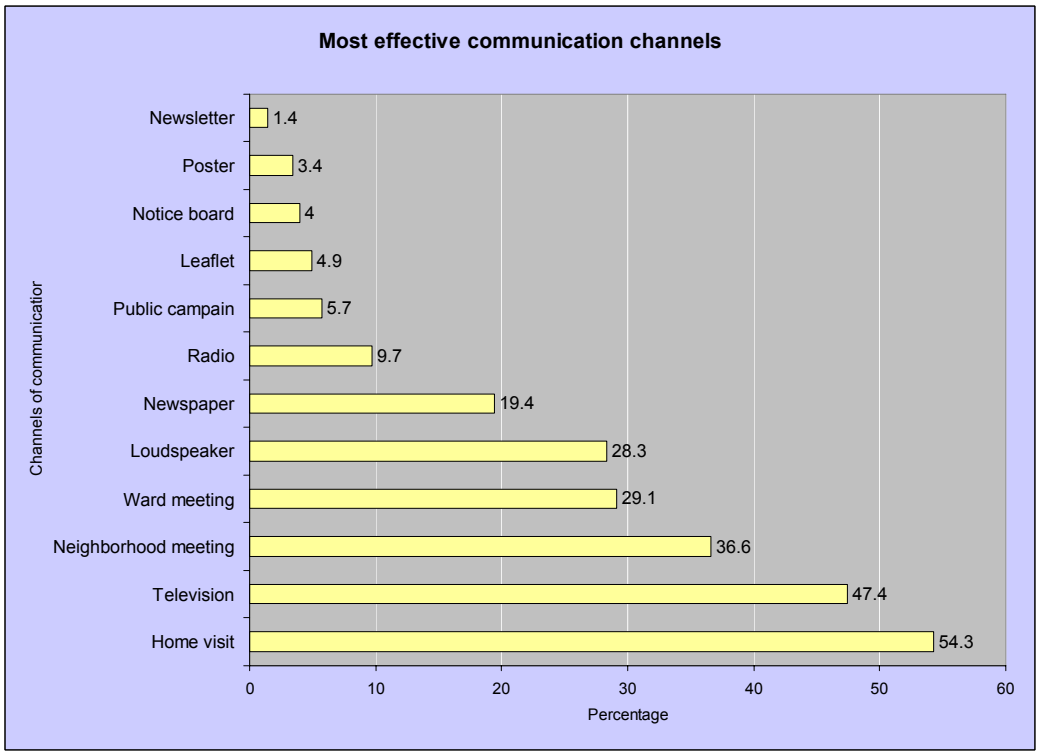
- With regard to sources of received information, from household interviews, the most frequent sources of information received by interviewees are from television (27.5%), from their neighbors/ friends/ relatives (25%), and respected person in the community/ Ward (12.5%). Perceived as most influential person to communicate information regarding water, waste water, sanitation are Ward leaders (41.1%), representative of the WSDC (19.1%), respected person (15.1%) and head of the area (truong khom, 12.6%).The most frequency of the public meetings held in the 4 Wards is monthly (20%) and quarterly (20%).
- With regard to loudspeaker system in the Ward, the number of loudspeaker system is not equally accessible among the 4 Wards. The number of opinions that there is loudspeaker in Ward 2 is at most (82%) and in Ward 6 is at least (24%). The most suitable time for broadcasting the news and information from the loudspeakers, almost interviewees responded that in the morning (50.2%) or in the morning and at noon/ afternoon/ late afternoon (39%).

3. Ranking Effective Channels of Communication to Households

According to interviewees ratings, the most effective channels of communication to the households are - in descending order- home visit 54.3% (190 opinions), television 47.4 (166 opinions), neighborhood meeting 36.6% (128 opinions) and Ward meeting 29.1% (102 opinions).

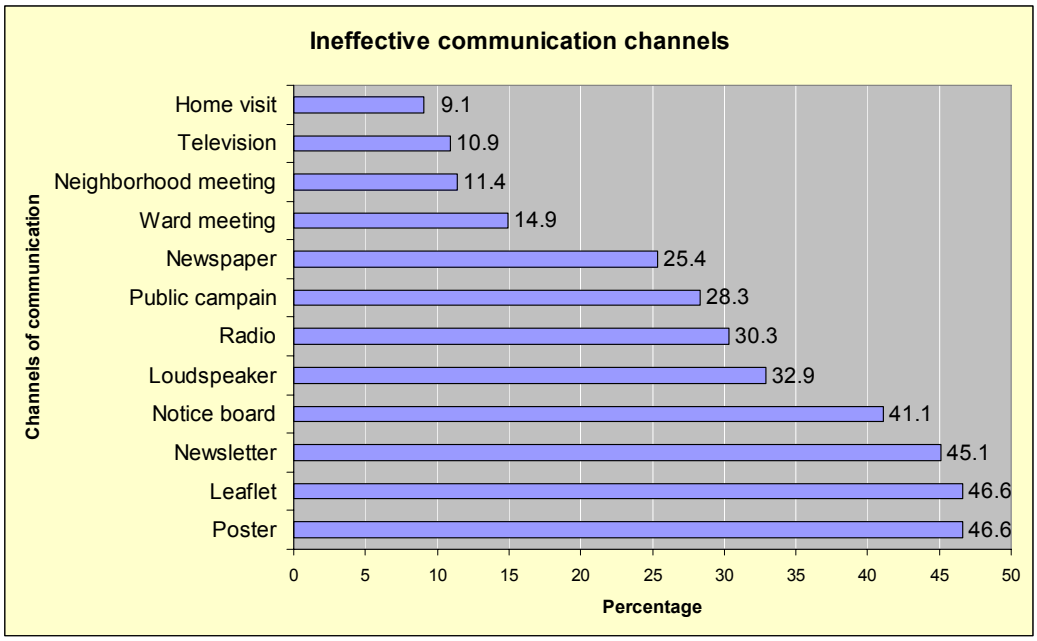
Other effective communication channels given by the interviewees are friends doing business together in the market, notice enclosed in the bill, schools at all level (the children will tell what they learnt at school), Khmer temples, Catholic churches, health workers/ staff and head of neighborhood (to truong to dan pho) visit the area/ head of the area (khom truong) visit each households.

Figure 14: Most effective channels of communication (in ascending order)



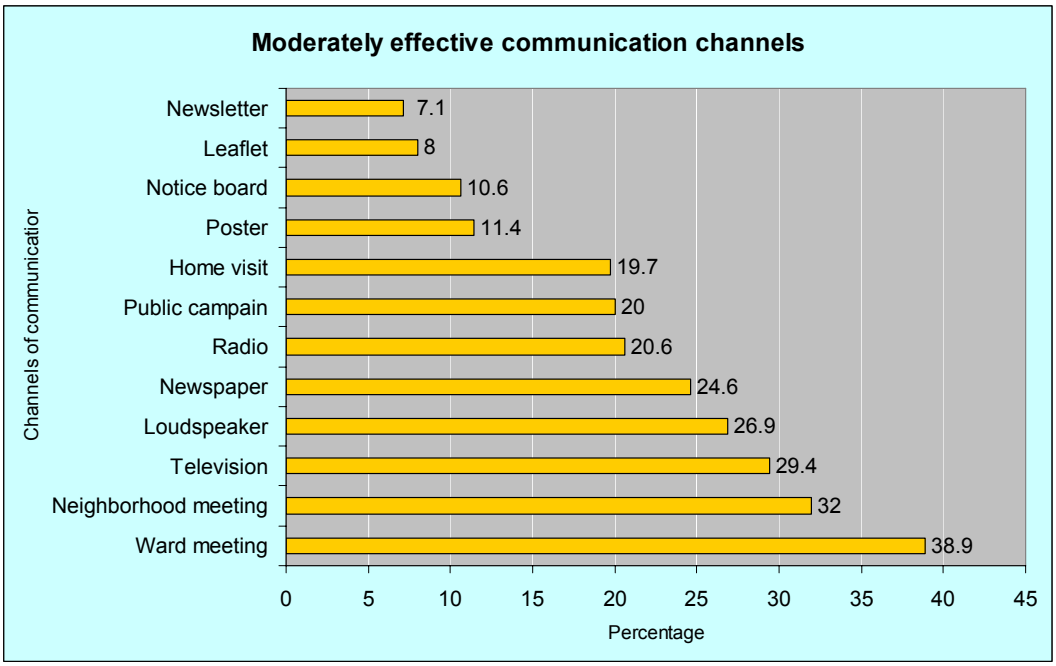
According to the survey results, among the channels of communication, the ineffective communication channels are through the form of seeing or reading such as poster (46.6%), leaflet (46.6%), newsletter (45.1%) and notice board (41.1%) which is shown in Figure 16 below.

Figure 15: Ineffective channels of communication



Compared the percentage of those interviewees valued the very effective and ineffective channels of communication, it could be seen clearly that except the indirect form of communication by television which is the most effective, the communication channels through direct contact are more favorable and effective such as home visit, neighborhood meeting and Ward meeting than the indirect form of communication such as poster, leaflet, and newsletter. It is obviously that communication through television achieved moderately to very effective results is appropriate because the number of surveyed households having television to access information is relatively high (according to Table 7, 97.7% of interviewees possess a TV).

Figure 16: Moderately effective channels of communication



FGD results also revealed the consistency with household interview results. Local people are able to access information from their neighbors and friends through the meetings or daily activities. Most participants in FGDs supposed that the most IEC activities in the Wards are household visit, group meeting, or mouth-to-mouth communication through the meetings in the area, neighborhood, Ward and MOs and leaflet delivery (in batch of activity).

From FGDs in Ward 2, the MOs group told that there are home visit, group meeting and leaflet delivery carried out by Youth Union, WU, Red Cross Association and health station. According to this group, the awareness of people has been increasing through such communication. The female group added that the locality also broadcasting through loudspeaker twice a day. These are combined program with other campaigns such as environmental sanitation, clean living, and civilized lifestyle, campaigns of pupils and students and MOs in the whole Ward. Besides, there are also panel, poster, leaflet and mouth-to-mouth communication in the meeting of community, area, Ward and MOs.

From FGDs in Ward 6, the MOs group said that the primary communication is in the neighborhood meeting combined with other topics or through the collaborators in the neighborhood. According to opinions of female FGD, the Ward has the form of leaflet delivery, mouth to mouth communication in the meeting or there are daily broadcasting program through the loudspeaker twice a day in the early morning (5am) and in the late afternoon (5pm). In fact, according to them, the loudspeaker system cannot reach everyone because it does not comprehensively cover the Wards so local people in many further neighborhood and areas are not able to listen due to the distance involved. Moreover, some loudspeakers did not operate anymore. Even though they face difficult they could be overcome. They also commented that communication through television may achieve high effective because every household had television, after a hard day of working many people watch the news so they knew about such issues.

FGDs in Ward 9 reveal the same result. The locality launches the campaign through MOs and combined with other issues through the loudspeaker, leaflet, mouth-to-mouth

communication in the meetings (opinions of MOs group) and group meeting and announcement (opinions of female group). The male group said that the Ward delivered leaflets on clean water use or combined talks about water in the community meeting (once per two months) by the Ward staff. Besides, the WU and YU also organized home visit to mobilize and remind. A woman said "*if the communication for building the drainage and waste water treatment is in such a form, everybody will participate enthusiastically because the benefits of water treatment for a better environment will have been explained clearly*".

According to opinions expressed in FGDs, the key persons in such IEC activities in the three Wards are the head of the neighborhood, area and MOs staff, but it is more frequently and effectively practiced by the WU and YU.

In general, according to the most numbers of interviewees, the most effective channels of communication to the households are home visits 54.3%, television 47.4, neighborhood meetings 36.6% and Ward meetings 29.1%.

Comparing the percentage of those interviewees valuing the very effective and ineffective channels of communication, it can be seen clearly that except for the indirect form of communication by television which is seen as the most effective, the communication channels through direct contact such as home visits, neighborhood meetings and Ward meetings are more favourable and effective than the indirect forms of communication such as posters, leaflets, and newsletters.

FGD results also revealed the consistency with household interview results. Local people are able to access information from their neighbors and friends through their meetings or daily activities. Most participants in FGDs supposed that the most IEC activities in the Wards are household visits, group meetings, or mouth-to-mouth communications through the meetings in the area, neighborhood, Ward and MOs and leaflet delivery.

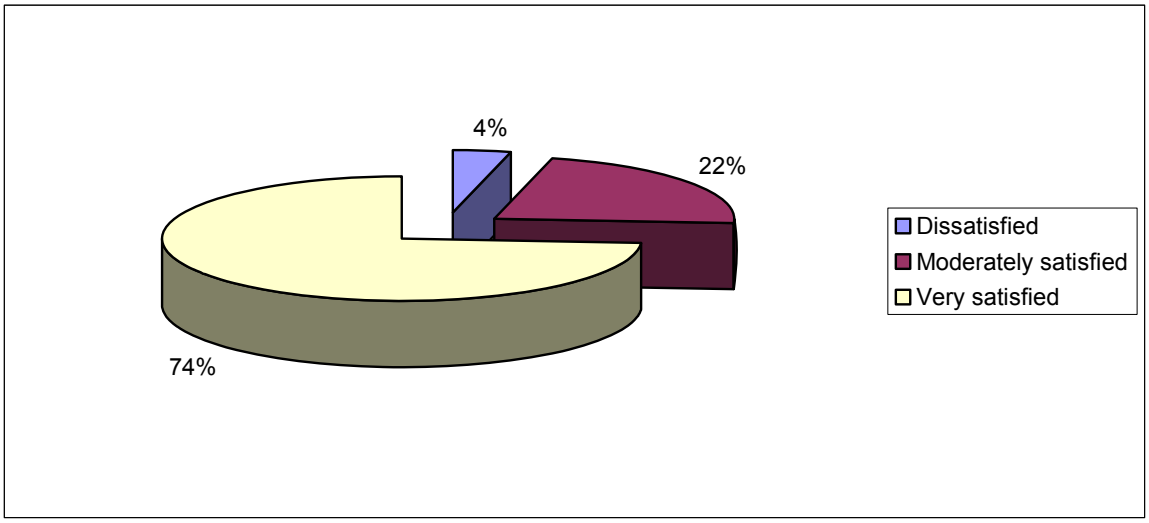
V. SATISFACTION WITH PIPED WATER, WASTE WATER AND SOLID WASTE COLLECTION SERVICES

Part V reports the investigations into the level of satisfaction on the provision of piped water, waste water and solid waste collection services

1. Satisfaction with the Piped Water Supply Service

Most interviewees (96% of interviewees) were very and/or moderately satisfied with the piped water supply service including 74% of interviewees (248/335) being very satisfied and 22% of them (75/335) being moderately satisfied. However, there are still 4% of interviewees (12/ 335) were dissatisfied with the service.

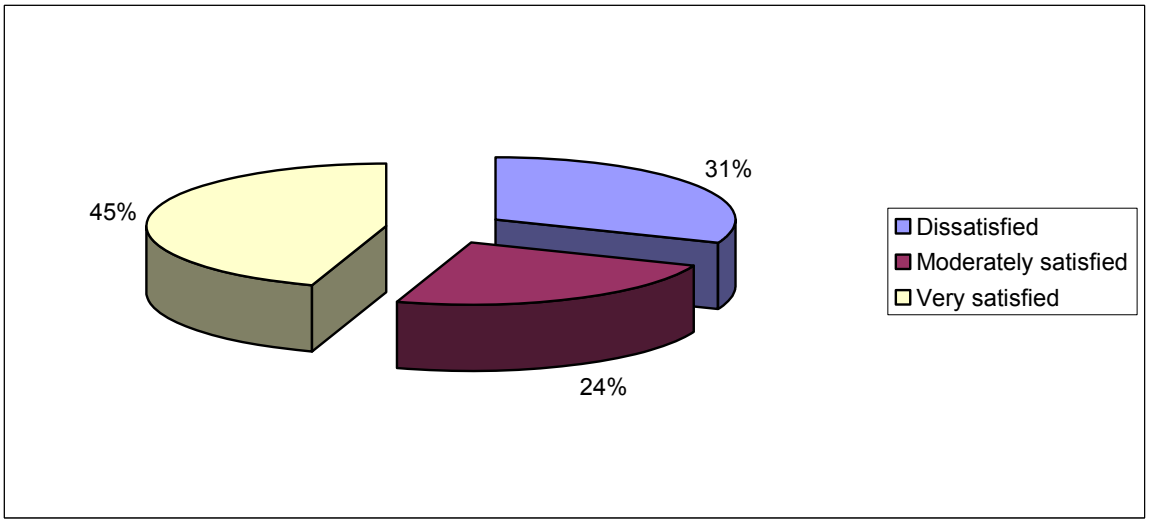
Figure 17: Satisfaction with the piped water supply service



2. Satisfaction with the Wastewater/ Drainage Service

69% of interviewees were very and moderately satisfied with the waste water/ drainage service including 45% (133/292) of interviewees being very satisfied and 24% (69/292) of interviewees being moderately satisfied. In fact, the number of those interviewees who were dissatisfied with the service is still at a considerable 31% (90/292).

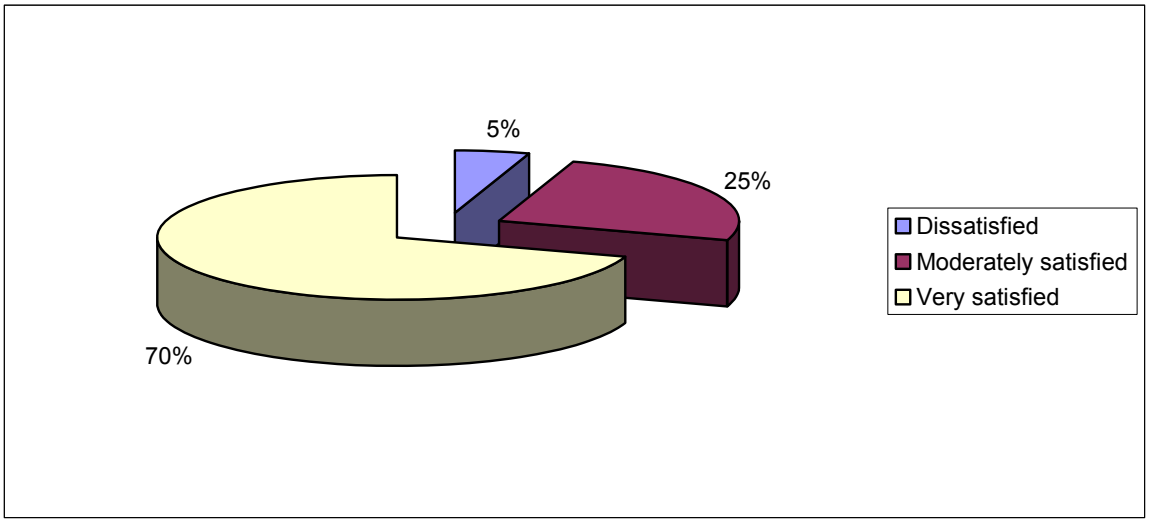
Figure 18: Satisfaction with the waste water/ drainage service



3. Satisfaction with the Solid Waste Collection Service

Almost all interviewees (95% of interviewees) were very or at least moderately satisfied with the solid waste collection service including 70% (204/293) of interviewees being very satisfied and 25% (74/293) of interviewees being moderately satisfied. But there are still 5% of interviewees not satisfied.

Figure 19: Satisfaction with the solid waste collection service

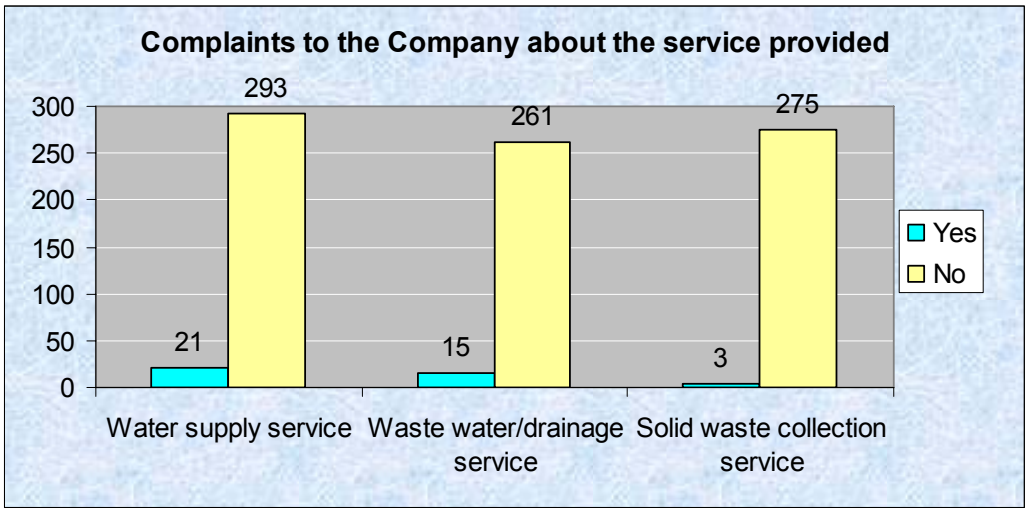


In short, if compared the satisfaction on the three services of piped water, waste water and solid waste collection, the ratio of those interviewees very satisfied with the piped water service is the most (74%) and those interviewees dissatisfied with the waste water service is the most (31%). Therefore, the most urgent matter is the drainage system.

4. Complaints about the Quality of Service Provided

From the household interviews, it showed that majority of respondents were satisfied with the services provided. In fact, in some areas even though the interviewees were dissatisfied, they hesitated and rarely made complaints directly to the Company. In case if having any problem, the local people often informed the head of the areas/ neighborhood or the Ward in their meetings. Some opinions felt it would take their time or it would be the same if complained or not knowing how to complain: "*Having doubts but have never made any complaints because we think it will be the same if complaining. We only suggested that the quality of piped water should be improved better due to its aluminous", "I have no time to go for complaint due to my busy work, seeing that it is still the same if complaining, it is easy without complaints", "Do not know how to make complaints".*

Figure 20: Complaints to the Company about the services (in Hh ratings)



Water supply service

There are 21 opinions (6.6%) complaining about the water supply service. Most complaints (16 opinions) are about the quality of piped water. There are 2 complaints about the charges, 2 complaints about the leaks (before the meter), 1 complaint about the incorrect meter reading.

Waste water/ drainage service

There are 15 opinions (5.4%) complaining about the waste water/ drainage service. 9 complaints are about the poor drainage and 9 complaints are about the bad odour, 6 complaints are about the blocked pipes/ stagnant of sullage pits, 6 complaints are about the flooding, and 2 complaints are about open manhole.

5. Courtesy of Company's Staff in Handling Customers' Complaints

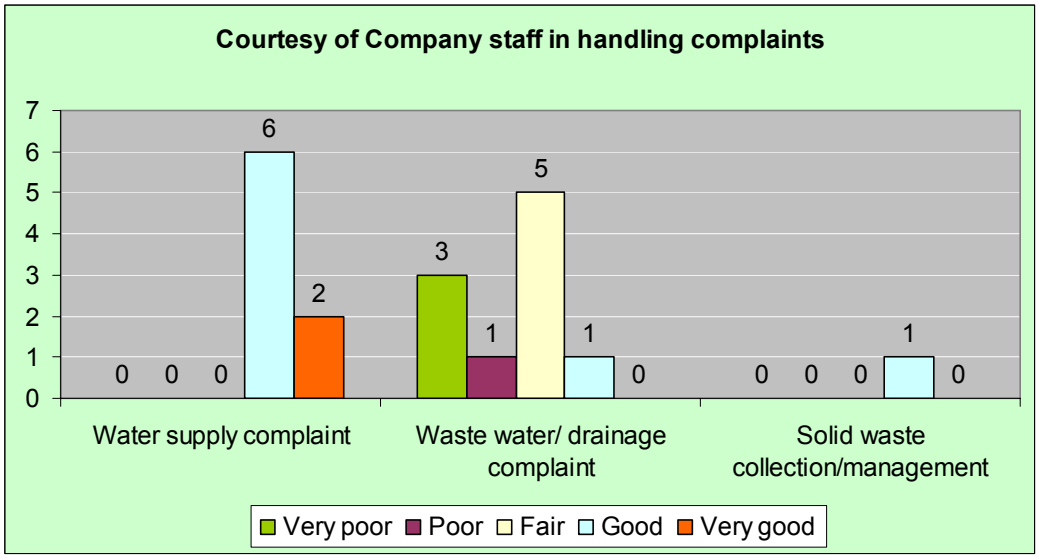
Among the 3 companies, the courtesy of Drainage Company' staff in handling complaints is still valued at bad level.

There are 8 opinions valued good and very good about the courtesy of Water Supply Company's staff in handling complaints including 6 opinions valued good and 2 opinions valued very good.

Among the 10 opinions about the courtesy of Waste Water/ Drainage Company's staff in handling complaints, except the 5 opinions valued fair and 1 opinion valued good, there are still 3 opinions valued very bad and 1 opinion valued bad.

Only one opinion valued good about the courtesy of Solid Waste Collection Company.

Figure 21: Handling the customers' complaints about the service



6. Effectiveness of Complaint Resolution

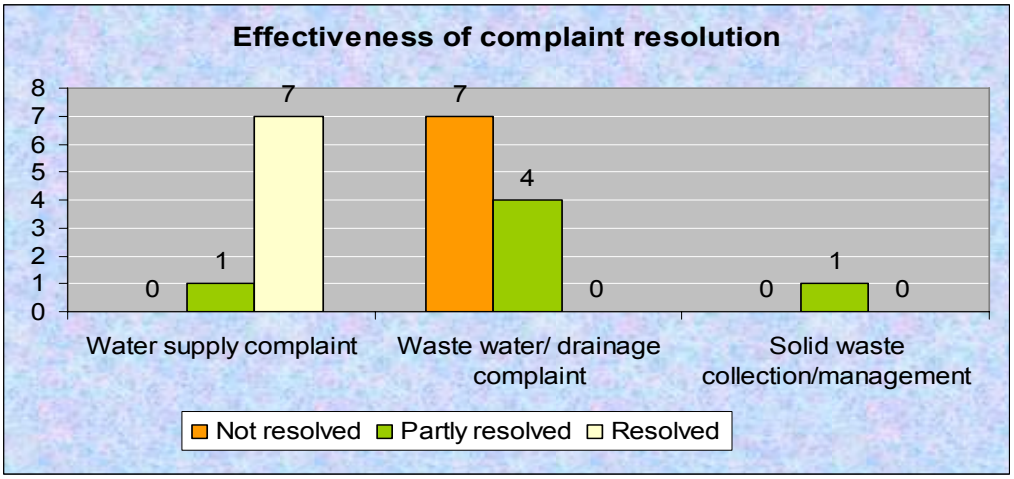
Similar to the result of courtesy of staff in handling complaints, the effectiveness of complaint resolution of the Drainage Company is still not good due to a large number of people not having had their complaints resolved.

Among 8 opinions on the effectiveness of complaint resolution of Water Supply Company, 7 opinions answered that their complaints had been resolved and 1 opinion was the complaint had been partly resolved.

7/11 opinions of interviewees regarding the effectiveness of complaint resolution of Drainage Company revealed that their complaints have not been resolved while 4/11 opinions showed that their complaints have been partly resolved.

Only one opinion regarding the effectiveness of Solid Waste Company revealed that their complaint has been partly resolved.

Figure 22: Effectiveness of complaint resolution



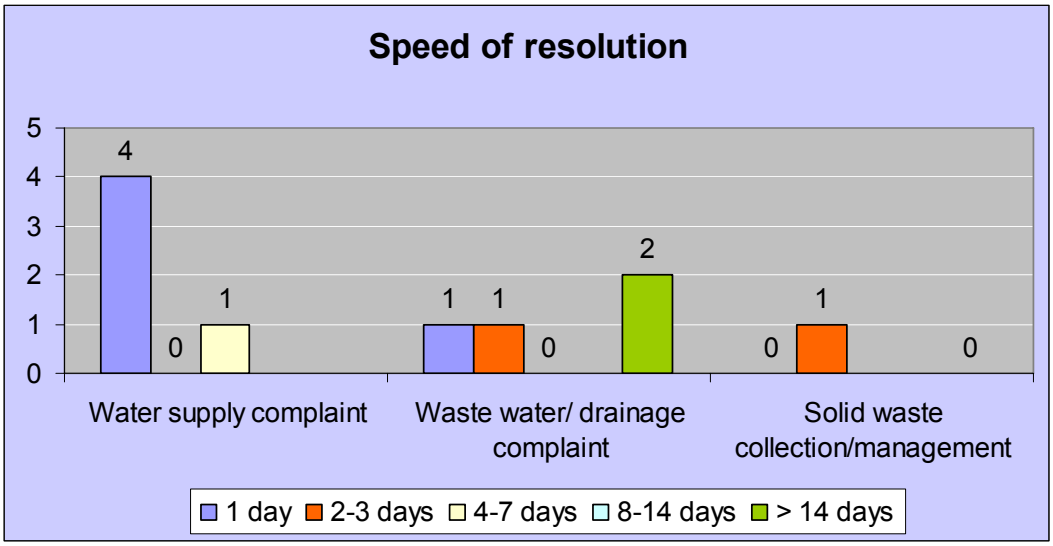
7. Speed of Resolution

Among the total of 5 complaints on the water supply, 4 complaints had been resolved within 1 day and 1 complaint resolved within 4-7 days.

Among the 4 complaints on the drainage, 1 complaint resolved in 1 day, 1 complaint resolved in 2-3 days and 2 complaints needed more than 14 days to be resolved.

One complaint on solid waste collection has been resolved within 2-3 days.

Figure 23: Speed of resolution



Suggestions for the improvement of the current water supply and waste water services

Beside those interviewees who had good comments on the quality of service and did not have any suggestions, below are some opinions of interviewees on the service provided:

As for those interviewees who are not able to access the services need to be provided water supply and drainage system for a better environment (7 opinions).

Those interviewees who could access the service suggested that the services should be improved (17 opinions)

Piped water supply service

- Water supply should be provided (2 opinions) and carried out in a short time (1 opinion).
- Quality of water supply should be improved/ treated better (14 opinions) because sometimes it was aluminous, turned yellow, deposit lime sediment and had bad odour (10 opinions) or itchy (1 opinion).
- Piped water should be provided continuously (1 opinion). In case cutting off the water supply, the company should announce customers in advance (2 opinions)
- The price for water use should not be put up (1 opinion). It is relatively high compared to the low income of the people so it should be reduced (3 opinions). The price should be adjusted to be reasonable for the people (1 opinion).

Waste water service

The public drainage system in the whole Tra Vinh town should be improved/ upgraded (10 opinions). Besides, it should also be provided in those have-not areas (19 opinions).

- There should have/ construct the public drainage system and sullage pits in the alleys to prevent flooding, polluted environment and diseases so as to have a clean, green and better environment for people (37 opinions). *"Expected to have drainage system so that the household waste water have a way out"* (1 opinion), *"There should have a person in charge visit the households to provide the information or through the meetings"* (1 opinion), *"Suggested to have the drainage system soon because it is really needed now"* (1 opinion), *"There should have sullage pits connected to the main public drainage system"* (1 opinion).
- The available drainage system/ sullage pits should be improved - cleaned to allow waste water to flow more freely when it rains (32 opinions), the drains should be covered and connected to the main road without causing pollution and bad smells (3 opinions). *"This current system has a lot of solid waste/ garbage in it"* (1 opinion), *"The main drainage system is higher than the drainage branches so waste water could not have the way out"* (1 opinion). *"The waste water could not be drained off so it flows back from the drainage system in the large main road to the alleys"* (1 opinion).
- The size of drain/ sullage pits should be larger for unchoked and easily flows of waste water (11 opinions), *"Suggested to enlarge the drainage/ sullage pits because the waste water often overflows to the house"* (1 opinion), *"The current size of the drain is too small compared with the large number of population in the area"* (1 opinion), *"The sewerage system is still small so it is still flooded and overflows in the rainy season"* (3 opinions).
- More attention should be paid to the drainage system due to its flooding during the rainy season (3 opinions) *"We have not ever seen any one from the company come to dredge the drain, in case it gets choked with vegetation or solid waste then we have to manage by ourselves"* (2 opinion); *"Suggested that the drain should be frequently checked and dredged to prevent flooding during the rainy season* (4 opinions), *"The company assigned staff for dredging the drain but it was done cursorily, after that it was still the same, the drain was still choked again. We suggested that it should be done better and with care* (1 opinion), *"The drain often collapsed, and the Ward informed the company for repair 15 days later but local people do not have time for complaints"* (1 opinion).
- There should have factory for waste water treatment so that the environment will not be polluted (1 opinion). In fact, the information on the factory for waste water treatment should be provided such as the price of contribution, the place of the factory, how the waste water will be treated (1 opinion). After completion of the drain construction, the contribution should be collected combined with the piped water payment, the waste water treatment should be free-of-charge (1opinion)
- Regarding the contribution for waste water treatment, *"The price of payment should be reasonable to the family income. Suggested that the company should not collect those poor, in food shortage".*
- Local people should be raised awareness on the public hygiene (1 opinion); the customs and community awareness should be changed (1 opinion). *"Suggested that information should be provided to each household"*.
- There should be a solution for solving the problem of the waste from those households keeping pigs as well as for keeping public sanitation in the area (1 opinion).

CHAPTER VI CONCLUSIONS AND RECOMMENDATIONS

I. CONCLUSION

In the following, key points and main findings on the situation related to the KAP of local people, IEC practice and satisfaction on the provided service related to piped water, waste water and solid waste management as well as recommendations for improving these services are described.

General information on the basic infrastructure regarding piped water, waste water and solid waste

The basic infrastructure regarding piped water, waste water and solid waste still did not completely cover the 4 surveyed Wards. Except for Ward 9, the majority of people living in Ward 2, 4 and 6 are able to access the piped water system provided by Tra Vinh Water Supply Company. The waste water system is still incomplete; drainage system/ small size of drain/ sullage pits leading to flooding and stagnant of water in some places in the 4 Wards. The solid waste collection service could not cover some remote areas so solid waste is still disposed by burning, burying, throwing to the river/ empty plot of land by the people themselves.

KAP RELATED TO WATER USE, WASTE WATER AND SANITATION

Water use

There are 6 sources of water use in the 4 surveyed Wards they are; piped water, rain water, well water (pumped and dug wells), pure water, bottled water and buying water. People mainly use piped water provided by Tra Vinh Water Supply and Drainage Company for cooking, drinking, bathing and washing that have ratios of 88.9%, 42.3% and 90% respectively.

However, majority of households live along the main road/ street being able to access the piped water meanwhile the other households located in the remote area which is far away from the main road could not. They have to use the well water (pumped and dug wells), buying water (from those households having piped water or from the water seller) and rain water during the rainy season. Besides, many well-to-do households buy pure/ bottled water for drinking (20liters/ bottle) but some other poor store piped water, have alum treated and then cook for drinking. Some households use both piped water and rain water or well water.

Regarding the quality of the sources of water, they are good and acceptable in general. In fact, comments on quality of piped water, it has been accessed by participants in FGDs that it was good the quality was not really high.

The majority of those households connected to piped water paid on average from 10,000 VND up to less than 100,000VND (80.6%). Majority (71%) of customers assessed the payment as moderate and acceptable.

Sanitation/ Household toilets

331 households (94.6%) have household toilets and 19 households (5.4%) do not have the toilets. Those households which do not have toilets, either dispose human waste by storing it in plastic bags and then throw it to the river, or use neighbor’s latrines, public toilets, and fish pond toilets. Among them, there are 47.4% did not want to borrow money for some reasons such as economic difficulties, their feeling that it was not necessary to borrow money because of being afraid of their inability to pay back the debt, their being accustomed to using fish pond toilet so they did not want to change the old habit or their not seeing the importance of keeping the environment clean.

Therefore, the survey result shows that awareness of interviewed households on knowledge regarding the environmental sanitation is at a low rate: 53.8% of interviewees recognized the harmful effects such as spreading dangerous diseases and polluting the water source if using the river as a toilet, 5.3% of opinions which thought it did not cause any harm. In fact, there are still 47.4% of interviewees, which do not have toilets, and did not want to borrow money because they thought that it was not necessary, or did not see any influence or were used to the fish pond toilets.

Waste water/ Drainage

There is no drainage system for waste water treatment before it flows to the river.

Most waste water flows from households to the public drainage system along the main roads. However, in some areas throughout the 4 surveyed Wards, water stagnation and flooding occurs when it rains and/or there are high tides because the sullage pits are incomplete/ too small compared with the increasing population and overcrowding. Another reason is due to the lack of rubbish bins, people drop solid waste into the uncovered drains causing water to stagnate, mainly where water runs from the small sullage pits to the main ones (it is an inter-Wards system).

In those areas not having a drainage system, waste water flows to the nearby ponds/ holes dug by the households or freely to the ground where it is gradually absorbed. Households nearby the rice fields let their waste water run to the fields/ ponds/ ditches - during the rain or high tides, it is also a matter of fact that the waste water/ dirty water overflows the houses due to the lack of drainage.

Results from household interview shows that 76% of respondents reported having waste water from daily activities such as bathing, cleaning, washing around their houses. 80.9% of interviewees answered “yes”, having public sewerage system around the houses. Among them, 95.1% of those connected to the drainage system and 4.9% of those not connected to the system. Majority of those households (84%) had been connected for more than 3 years.

- With regards to satisfaction about the surrounding drainage system, the ratio of unsatisfied households (52%) is higher than those satisfied households (47.7%). Ward 9 has a lack of drainage system so those households did not satisfy make up a high ratio. Those interviewees who were not satisfied with the drainage system due to; the drainage system being small/ not good or bad, the flow of drainage being slow causing water to stagnate/ flood and become muddy during the rainy season, especially during heavy rains, etc.
- With regards to agreement on the treatment of waste water, 84.3% agree that waste water should be treated (cleaned) to prevent pollution and ensure good environmental sanitation. In fact, there were 3.4% of respondents who did not agree, and 12.3% who did not know or would not answer the question. The reasons for not answering or not responding may be due to a lack of awareness and/or not caring and/or having low expectations and/or relying on the government.
- With regards to payment for waste water treatment, 77.7% inducted a willingness to pay for waste water treatment in order to reduce disease and for a green, clean, hygiene, unpolluted environment/ source of water use as well as for a better health/ life of everybody and environmental sanitation for society. Among them, 32.4% suggested that the cost of payment/ contribution should be 1,000 VND/ m3. In reality, there are still 3.4% not agreeing due to low awareness, low incomes and worry of the payment so these interviewees depend on the government decision.

Solid waste

There is a public solid waste collection service in the surveyed Ward. However, the routes of the service provided still do not cover the whole of the residential area in the 4 Wards.

Among 350 interviewed households, 77.4% of the surveyed households use solid waste collection services. 22.6% (79/350) of the surveyed households do not use such services there are high ratios of households not using the solid waste collection service in Ward 9 (92%) and in Ward 4 (27%). The leader of Ward 9 assessed that the situation on environmental sanitation in the Ward was not really good. It is because previously people threw the garbage into the river and they often disposed of the waste by burning it, leaving it to decompose, or burying it in the rainy season. Leader of Ward 4 told that there was a service provided in some streets, but not provided in other smaller streets which were further from the main road so the people throw the waste randomly. Those people living near the river or canal throw their waste into the river.

- Among the 22.5% (79/350 households) not using the solid waste collection service, the most popular ways of garbage disposal are; burning 50.6% and 15.1% using the waste collection service without any paying “do rac ke” which means they put their solid waste into the rubbish bins of neighbours who paid the fees. The rest of them (mainly concentrating in Ward 4 and Ward 9) dispose the garbage by burying it, throwing it into the field, river, ditch or any empty plot of land. The majority (89.9%) did not change their garbage disposal methods during the rainy season or during flooding. They dig a pit or hole to throw the waste and then cover it. Another method involves throwing solid waste into the dry wells or throwing it into ponds, gathering them to a high plot of land during the rainy season and burning them in the dry season.

Hence, it can be seen that some people still have a low level of awareness so in reality, there is still the situation of either throwing garbage into the river or randomly in some areas near the canals, river or in the deep valleys.

- With regards to frequency of the solid waste collection service, 95.2% remarked that solid waste was collected every day. 71.2% paid less than 10,000 VND per month for the solid waste collection service.
- With regards to satisfaction with the solid waste collection service, 76% were satisfied with the current solid waste collection management, 21.1% were not satisfied with the solid waste collection. Similar to the results on the use of solid waste collection service and garbage disposal, dissatisfied householders make up a higher ratio in Wards 9 (86%) and 4 (14%).
- With regards to willingness to pay (WTP) for solid waste collection service; among 22.5% (79 households) not using the solid waste collection service, 54.9% indicated a willingness to pay. Regarding the cost of payment for the solid waste collection service, 78.7% of them were willing to pay less than 10,000VND/ month.

IEC PRACTICE/ ACTIVITIES

Currently, the most IEC activities in the Wards are household visits, group meetings, or mouth-to-mouth communication through meetings in the area, neighbourhoods, Wards and MOs with leaflet delivery (in batch of activity). In addition, in the Wards, there are daily broadcasting program through the loudspeaker twice a day.

IEC practice is mainly carried out by the local authorities. The People’s Committee of the Ward launched the movement through the Mass Organizations to coordinate with the other propaganda programs. There was cooperation of Mass Organizations at the Ward level (Youth Union, Women’s Union, Red Cross Association and Health Station) and the head of neighborhood and the areas at the community level to communicate information regarding clean water in the weekly/ monthly meetings.

According to leaders of the surveyed Wards, IEC activities are primarily delivered through loudspeakers, meetings in the community and areas, group meetings, open meetings and home visits. In fact, there are still local people who lack awareness about sanitation and

waste disposal issues. This could be due to the differences in customs and living habits as well as cultural/intellectual standards and the level of interest of the people.

From the survey result show low levels of respondents receiving any information on piped water, drainage and sanitation and indicate that more IEC activities should be done: there are - depending on the issue - between 80.8% and 90.5% of respondents who have not received any information in the last six months.

- The frequency of information received on piped water, waste water and sanitation is at most once (45.3%) during the past six months. The most frequency of information received is the information on piped water.
- Perceived by households as most effective sources of information are –in descending order- information from television (27.5%), from their neighbors/ friends/ relatives (25%), and respected person in the community/ Ward (12.5%). The most influential person to communicate information regarding water, waste water, sanitation is Ward leaders (41.1%), representative of the WSDC (19.1%), respected person (15.1%) and head of the area (truong khom, 12.6%).The most frequency of the public meetings held in the 4 Wards is monthly (20%) and quarterly (20%).
- With regard to loudspeaker system in the Ward, the loudspeaker system is not equally distributed among the 4 Wards. The number of opinions that there is loudspeaker in Ward 2 is at most (82%) and in Ward 6 is at least (24%). The most suitable time for broadcasting the news and information from the loudspeakers, almost interviewees responded that in the morning (50.2%) or in the morning and at noon/ afternoon/ late afternoon (39%).

Effectiveness of IEC activities

According to the most numbers of interviewees, the effective channels of communication to the households are; home visits (54.3%), television (47.4%), neighborhood meetings (36.6%) and Ward meetings (29.1%).

Compared the percentage of those interviewees valued the very effective and ineffective channels of communication, it could be seen clearly that except the indirect form of communication by television which is the most effective, the communication channels through direct contact are more favorable and effective such as home visit, neighborhood meeting and Ward meeting than the indirect form of communication such as poster, leaflet, and newsletter.

FGD results also revealed the appropriation with household interview results. Local people are able to access information from their neighbors and friends through the meetings or daily activities. Most participants in FGDs supposed that most common IEC activities in the Wards were: household visits, group meetings, or mouth-to-mouth communications through the meetings in the areas, neighborhoods, Wards and MOs as well as leaflet delivery.

SATISFACTION WITH THE PIPED WATER, WASTE WATER AND SOLID WASTE COLLECTION SERVICE

Most interviewees were very satisfied or moderately satisfied with the piped water, waste water and solid waste collection service. In fact, if the satisfaction on the three services of piped water, waste water and solid waste collection, is compared, the highest ratio of those interviewees who felt very satisfied was with the piped water service (74%) and highest dissatisfaction level was with the waste water service (31%). Therefore, the most urgent matter is the drainage system.

Complaints about the quality of service provided

Water supply service

There are 21 opinions (6.6%) complaining about the water supply service. Most complaints (16 opinions) are about the quality of piped water.

Waste water/ drainage service

There are 15 opinions (5.4%) complaining about the waste water/ drainage service. 9 complaints are about the poor drainage and 9 complaints are about the bad odours, 6 complaints are about the blocked pipes/ stagnant of sullage pits, 6 complaints are about the flooding, and 2 complaints are about open manhole.

Among the 3 companies, the courtesy level of Drainage Company' staff in handling complaints is regarded as poor.

Similarly, the effectiveness of complaint resolution by the Drainage Company is regarded as poor due in large part to the number of people whose complaints have not been resolved quickly.

Among the total of 5 complaints on the water supply, 4 complaints had been resolved within 1 day and 1 complaint resolved within 4-7 days.

Among the 4 complaints related to drainage, 1 complaint was resolved in 1 day, 1 complaint was resolved in 2-3 days and 2 complaints took more than 14 days to resolve.

One complaint related to solid waste collection was resolved within 2-3 days.

II. RECOMMENDATIONS

The following recommendations for the improvement of both infrastructures and IEC activities related to piped water supply, waste water and solid waste collection in the program site are based on the findings of the survey and suggestions of the interviewees,.

1. Piped Water

1.1. The source of piped water supply is good in general except in some more remote areas. It has been suggested that piped water supply system should be provided to those households not connected to the system, especially in remote areas which is further from the main street/ road and if possible, it should be provided soon. Particular to the poor households, the program should have the capital loan for them to pay by installment.

- The benefits of clean water use should be communicated to the households still using the pumped/ dug wells, and they should be encouraged and supported to connect to the water meters (since there are piped water systems in these areas). The program could also cooperate with the local authorities to provide human resources to support communication. Community leaders and other respected persons should be encouraged to participate.

1.2. Quality of water supply

There are many opinions regarding the "not very good" treatment of piped water and suggestions that it should be improved/ treated better. Some customers complained about the water quality (clear or unclear) without knowing the reason. The program should work with the Water Supply Company on the process of piped water treatment so as to give more support and provide improved treatment techniques. The human resources (staff) of the company should also be supported and capacity improved both in using professional

techniques and in communication and contact with customer so as to satisfy the need of customers, to solve problem as well as to provide clear explanations.

Piped water should be provided continuously. In some cases the customers were not able to access information warning about cuts/interruptions to the water supply; there should be many and various forms of announcement that help customers access the information easier and more conveniently.

Communication on encouraging people to use piped water should be provided and the procedure for installation of water meters should be accurate/ clear, etc. The program should pay more care to those poor households not connected to the piped water system.

The price of water used should be reasonable/ affordable, relative to the households' incomes.

2. Waste Water

Even though the main roads/ streets have been equipped with a drainage system, in many alleys the drainage system is inadequate e.g. the size of sullage pits is too small compared to the number of households/population in the area. In some alleys, waste water still stagnates and flooding occurs causing pollution during the rainy season or during high tides.

The program should work with the Urban and Environment Company to have a thorough grasp on the sketch map/ topographic sketch of those areas lacking adequate drainage, identifying the reasons for this and improving the capacity for solving the problem of the related agency/ responsible companies. Then the program may select the priority areas to cooperate with the company, local authorities and the local people to improve/make good in accordance with participatory approach.

The program should enhance the IEC activities in order to improve the awareness of local people on keeping general sanitation, not letting their waste water flow into the alleys, not disposing of their rubbish/ garbage in the public drainage system causing water stagnate; explaining the harmful/ damaging effects and pollution on the water source/ stagnation of drain flows, etc. According to the survey results, the most influential persons identified to communicate information regarding water, waste water, sanitation are Ward leaders, representatives of the WSDC, respected persons and heads of the area (truong khom), methods of implementation could be through community meetings and the utilization of respected persons networks in the community (religious leaders, Khmer monks/ bonze in the temples etc.).

3. Solid Waste Collection

The program should work with the Wards, community areas (khom), and neighborhoods (to dan pho) in the program sites to have a clear understanding on the areas which have a high rate of households not using the solid waste collection service. Then, the program organizes and mobilizes those households to register to use the private solid waste service. In those areas without such private service systems, the program should support the people to organize one.

Those areas that still lack public garbage bins should be identified and the Urban and Environment Company should be supported to provide more public garbage bins in those areas.

IEC activities on the harmful effects of solid waste, the inappropriate treatment of solid waste such as burying, burning or disposing to the channel/river, etc should be organized.

The forms of communication should be appropriate and friendly through the cooperation of the neighborhoods, areas and Wards but the mode of operation should be lively and interesting. In this point, the program should support the staff of local authority to improve their communication skills through trainings, practicing with monitoring and lesson learnt, etc.

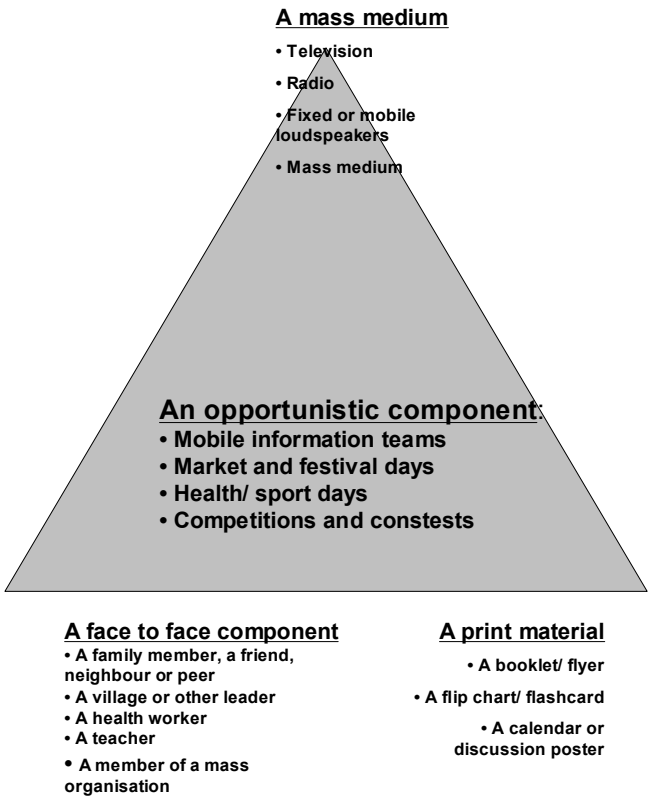
If possible, the program should pay close attention and develop a detailed understanding of the waste treatment/ solution for solid waste and waste water sourced from the health centres, hospitals etc,. The program should provide them additional advice on suitable waste disposal techniques and resources aimed at better solution.

The program should have a deeper understanding of households without hygienic toilets; on the number, capacity to pay and desire of improvement of those households. If they are capable of improving then the program may encourage them to improve by themselves. If they are not capable, the program may provide loan and pay by installment to build simple/ cheap and hygienic toilets or the program may support according to the mode of partial support. Accordingly, the program may organize a network of collaborators for monitoring and assessment.

4. IEC Activities

The study found out that the usual IEC channels are not fully perceived as most effective by people themselves. Thus, such channels should be re-adjusted as appropriate with those perceived as effective by the people. Additionally, IEC campaigns proved to be most effective if the four groups of channels - a mass medium, a face-to-face component, a print material and an opportunistic component - are combined. This is called by UNICEF the ∆- Formula (Figure 25).

Figure 24: UNICEF's basic [∆] formula for the IEC strategic approach in Vietnam



Source:UNICEF (2001), Effective Information, Education and Communication in Vietnam, Hanoi

The following channels are recommended to be used together in IEC work at the locality: Home visits (face-to-face) by a respected and trained person. On this occasion the

respective information sender should also distribute printed materials (leaflets) and discuss the contents with the households.

In addition, Ward meetings and Public Information Campaigns should also be implemented by the Ward leaders and heads of the areas. Furthermore, television should be used to disseminate IEC messages since TV-sets are available in almost all households interviewed (97.7 %).

Additionally, IEC training by IEC experts should be organized beforehand for local heads/ leader in the neighborhood/ area. Then the leaders will communicate the information to the people at the meetings. During the IEC meetings, visual aids should be used (poster/photos) to show the positive and negative effects. Handouts should also be distributes for further readings. Video films on wastewater and others sanitation education can also be shown at these meetings for improving better understanding for local people.

WWM IEC sources

Through the mass medium

- Television: More communication on the local broadcasting station and television station or community (photos, pictures illustrated the good-bad behaviors, the do – the do not, drama/ sketch, music, etc.). From the survey result on customers' opinions, a remarkable thing is that majority of people often watch television in the evening, during their rest time so the content should be clear, short, easy to understand and suitable to their interests.
- Fix or mobile loudspeaker: Repair the damaged loudspeaker in some area and equipped more loudspeaker in the remote area. Increase of the amount of time for communication of topics on clean water use and environmental sanitation through the loudspeaker system in the local community (areas and Wards)
- Community meetings (IEC by the local leaders).

Through face-to-face

- Home visit: a family member, a friend, neighbor or peer combined with delivery of leaflets which have attractive design with less word.
- Local collaborator in Clubs: combined with other IEC issues for behavior change. The most important thing is to cooperate with the collaborators in the area as well as the heads of the area, to organize training for the team.
- From opinions of Ethnic Committee, IEC work should pay attention to the local customs and habits of the community, especially the role of local key persons in the community, the respected person and the monks, etc. As for the Khmer, the program should cooperate with the monks in the temples, hamlet People's Committee as well as professional staff to talk after the speech of the monk during the monthly lunar day (full moon). The content of speech and materials should be edited and printed in Khmer language with the support of Ethnic Committee. As for Kinh people, the meetings and leaflets delivery are appropriate.

Others

- Reports and illustrated pictures/ photos: Local terms/ words should be used without any professional terms.
- Local collaborator: Based on the available groups and clubs in the community, selected potential collaborators and established the IEC groups in community to support the program. Community collaborators should be trained on IEC methods in a participatory approach as well as the application of various visual forms of communication to attract participation of local people.

- Traditional festival days: Combined with the available festivals of Khmer people in the locality to organize IEC activities such as contest and competitions in the community.
- Experience sharing: Cooperated with other related partners to organize IEC experience learning and sharing among the staff.
- Sanctions: Cooperated with related partners to set up sanction and enforcement.

WWM IEC process

Base on a combination of UNICEF formula and recommendation of a combined use of the four components of IEC channels, the following IEC process was presented in an order of the most preferred to the lesser effect.

1. Firstly, the representatives of WSDC should cooperate with the Ward leader in assigning/ organizing for WSDC staff and garbage collector to visit the households/ customers.
2. Through meetings in the Wards or areas, carry out IEC with participation of Ward leaders/ respected person to talk, making press reviews with the related IEC contents or introducing the good example/person at three month periods or when needed.
3. Through the Tra Vinh town televisions, newspaper and radio as well as loudspeaker system in the Ward to provide local people with information on the before, ongoing and after activities.
4. Through the Ward campaign to implement IEC program, after that organize meeting in small groups in the community or in the area with leaflets distribution for thorough understanding.
5. Use websites of the town or related agencies/ organizations such as WSDC, etc.

Encourage the active participation of the Ward authorities and stimulate their capacity and creativeness by organizing contests in/ among the neighborhood, areas or Wards in the dissemination of policies, good cooperation in solid waste and waste water management. Besides, information on experience-sharing, advantages and difficulties, good and bad practices, good stories/ persons during the implementation process should for environment protection also be recorded and acknowledge in the local newspapers, radio and television or Newspaper of WSDC newsletters.

Involve the town authorities in dissemination of information on planning, process and result of any current programs in Tra Vinh town such as Urban Upgrading and Wastewater Management through the town television, radio, newspapers and loudspeakers in the Wards.

Content of communication

From opinions of Ethnic Committee, as for ethnic people the message should be simple, clear, short (less and clear word make it easy to read), easy to understand and familiar to local lifestyle and language abilities (IEC messages in Vietnamese are useless if respondents have not mastered this language!), should have comparisons of the useful-harmful effects, specific benefits, practical to the health life of local people, bring up the interest/ attention of everybody, use illustrate pictures/ photos and display as a play on stage. Particular to the ethnic people, there should have Khmer language using both of the words of mouth and showing proof of detail situation for illustration.

The local people will remember what they see and hear in reality. The elderly are more interested in environmental sanitation than the young people; the messages should be clear, short with more pictures than words, especially when targeting the illiterate and elderly Khmer.

Effective IEC implementation should

Capture the attention of the right audience: Defining the target audience, selecting channels to reach the audience, attracting sufficient attention

Deliver an understandable and credible message: message clarity, fit with prior knowledge, duration of exposure

Deliver a message that influences the beliefs or understanding of the audience: Providing information, directing attention, triggering norms, changing underlying values and preferences

Pre-test messages and collect reactions from the intended audience before messages are finalized.

Use post-tests to find out whether the audience remembered the message and/or acted on it.

Research and evaluation on the effect as well as lesson learnt for timely adjustment.

Increase users' willingness-to-pay

The result of survey revealed that interviewees generally are to a high percentage willing to pay for wastewater management and solid waste collection services. In fact, they should also be informed about the health and hygiene issues and the connections/ effects to water use, waste water and solid waste, applied technology options, the costs and the organizational requirements, etc. so as to enhance the customers' awareness, convince them the necessity and reasonability in the payment amount for wastewater treatment and management, the transparency in their contribution as well as strengthen the voluntary participation of local people.

APPENDICES

APPENDIX 1: SURVEY SCHEDULE

SCHEDULE FOR SURVEY IN WARDS 2, 4, 6 & 9

TRA VINH PROVINCE

(Duration from 19/ 03/ 2008 to 31/03/2008)

19 - 22/03/2008: Training in Tra Vinh Town

24/03/2008: Preparation and planning for the survey

05 - 31/03/2008: Fieldwork in the 4 Wards: 2, 4, 6 & 9 – Tra Vinh Town

Duration	Ward 2	Ward 4	Ward 6	Ward 9	Total
24/03	-IDI with temple leader (Chua Ong Met) - IDI with leader of Ethnic Committee	-	-	-	**2** IDIs
25/03	18 households	16 households	17 households	9 households	**58** hhs
	-	Indepth Interview (IDI) with Vice-chairman	-	IDI with Chairman	**2** IDIs
	-	-	-	FGD with WU, YU and local leaders	**1** FGD
26/03	18 hhs	16 hhs	21 hhs	11 hhs	**66** hhs
	IDI with Vice-chairman of Tra Vinh Town		IDI with temple leader (Chua Moi)	-	**3** IDIs
	IDI with Vice-chairman of Water Supply and Drainage Company	-	-	1 male FGD 1 female FGD	**2** FGDs
27/03	18 hhs	20 hhs	19 hhs	12 hhs	**69** hhs
	IDI with Vice-chairman	-	-	-	**1** IDI
	FGD with WU, YU and local leaders	-	-	-	**3** FGDs
	1 male FGD 1 female FGD	-	-	-	
28/03	16 hhs	19 hhs	24 hhs	14 hhs	**73** hhs
	-	-	IDI with Vice-	-	**1** IDI

Duration	Ward 2	Ward 4	Ward 6	Ward 9	Total
			chairman		
	-	-	FGD with WU, YU and local leaders	-	**2** FGDs
	-	-	1 male + female FGD	-	-
29/03	26 hhs	32 hhs	21 hhs	5 hhs	**84** hhs
30/03	4 hhs	0 hhs	11* hhs	0 hhs	**15** hhs

Note: Duration for IDI and FGD were arranged by the local authority due to their availability.
(*) Due to the unsatisfied filling in the survey questionnaires of interviewee, more samples were conducted to guarantee for the quality.

APPENDIX 2: LIST OF SURVEY TEAM MEMBERS

No	Full name	Unit	Responsibility
5.	Do Bich Diem	Researcher – Social Work and Community Development (SDRC) Tel.: 090 7755614	IDI FGD HHs in Ward 4
6.	Chau Hoang Man	SDRC Tel.: 093 7485820	IDI FGD HHs in Ward 2
7.	Phan Thi My Nhung	SDRC Tel.: 091 3424177	IDI FGD HHs in Ward 9
8.	Nguyen Thi Phuc	SDRC Tel.: 098 3717846	IDI FGD HHs in Ward 6
9.	Huynh Anh Dung	Water Supply and Drainage Company Tel.: 091 3136259	IDI FGD HHs in Ward 6
10.	Le Phuong Thao	WSC Tel.: 090 6134661	IDI FGD HHs in Ward 2
11.	Do Ngoc Rang	WSC Tel.: 098 3855799	IDI FGD HHs in Ward 4
12.	Le Bich Nhu	WSC – Tel.: 091 4256555	HHs in Ward 2
13.	Nguyen Huu Khoa	WSC – Tel.: 016 84304409	HHs in Ward 2
14.	Phan Cong Thuan	WSC	HHs in Ward 6
15.	Dang Van Dung	WSC – Tel.: 094 5565285	HHs in Ward 6
16.	Pham Huu Tai	WSC – Tel.: 0974966047	HHs in Ward 9
17.	Thach Pha La	WSC	HHs in Ward 9
18.	Thi Cong Phu	WSC – Tel.: 0939066600	HHs in Ward 4
19.	Lam Van Tong	WSC	HHs in Ward 4

APPENDIX 3: HOUSEHOLD QUESTIONNAIRE

Questionnaire Control number	**Ward/Commune:**
Name of Interviewer:	**Residential area/hamlet:**
Telephone No.	**Residential unit:**
Date/Time	**Address:**
Name of City/Province:	**Telephone Number of Interviewee:**

BASELINE SURVEY QUESTIONNAIRE

Waste Water Management Program

INTERVIEWER: PLEASE READ OUT THIS TEXT TO THE INTERVIEWEE CAREFULLY BEFORE YOU START WITH THE INTERVIEW!

In the framework of waste water & solid waste management in provincial centers program, we are conducting the baseline survey incorporating Knowledge-Attitude-Practice & Consumer-Satisfaction-Survey, related with the waste water, solid waste and sanitation, in different levels. On behalf of the program management we would like to thank you very much for your cooperation and having time to answer the questions. All information provided by you will be considered for this study only and not used for any other purposes.

PART 1 FAMILY STATUS

1. Name of interviewee: . . . . . .

2. Age: . . . . . .

3. Gender:

1 □ Male

2 □ Female

4. Ethnicity:

1 □ Kinh

2 □ Khmer

3 □ Hoa

4 □ Other, please specify……

5. Education level:

1 □ Illiterate

2 □ Grade1-5

3 □ Grade 6-9

4 □ Grade 10-12

5 □ University/college

6 □ Vocational education

7 □ Other, please specify…….....

6. Profession:

1 □ Official
2 □ Worker
3 □ Small-scale Trading
4 □ Farming
5 □ Fishing
6 □ Private business
7 □ Home Duties
8 □ Other, please specify. . . . . .

7. Average monthly household income in last 12 months (estimated)?

1 □ < 500,000 VND
2 □ 500,000 - under 1 million VND
3 □ 1- under 2 Million VND
4 □ 2- under 3 Million VND
5 □ 3- under 5 Million VND
6 □ 5 Million VND or over

8. Number of members registered in the households?

1 One
2 Two
3 Three
4 Four
5 Five
6 □ > Five

9. Does your household possess one or more of the following facilities?

Note: Multiple answers possible!

1 □ TV
2 □ Radio
3 □ VCD/DVD
4 □ Other, please specify……

PART II KAP SURVEY RELATED TO WATER, WASTE WATER and SANITATION

A. WATER

10. What are the main sources for the following purposes?

Note: Multiple answers possible!

Cooking water quality scale: 1- Poor, 2- Acceptable, 3- Good

		Cooking	Drinking	Bathing &Cloth Washing
		Water quality	**Water quality**	**Water quality**
1 □	Rain water			
2 □	River			
3 □	Pond, lake			
4 □	Pump (drilled well)			
5 □	Buying water			
6 □	Piped water			
7 □	Pure water/ bottled water			
8 □	Other, please specify …… ……			

11. If you are connected to a piped water system how much do you pay for water per month?

1 □ I am not connected → GO TO QUESTION 13

2 □ < 10,000 VND

3 □ 10,000- <20,000 VND

4 □ 20,000- <30,000 VND

5 □ 30,000 - <50,000 VND

6 □ 50,000 - <100,000 VND

7 □ 100,000 VND or over

12. How do you consider the cost of piped water?

1 □ Expensive?

2 □ Rather expensive?

3 □ Moderate?

4 □ Cheap?

5 □ Don't Know/ No answer

B. SANITATION

13. Do you have a household toilet?

1 □ Yes (Continue with questions 14 & 15)

2 □ No→ GO TO QUESTION 16

14. If "Yes", what kind of toilet?

1 □ Septic tank toilet (continue with question 15 and then go to question 19 forWards)

2 □ Pit toilet→ GO TO QUESTION 19

3 □ Central (off-site) sewage system→ GO TO QUESTION 19

4 □ River toilet→ GO TO QUESTION 19

5 □ Other, please specify . . . . . → GO TO QUESTION 19

15. If you have a septic tank, how often do you empty the tank?

1 □ Whenever it is blocked

2 □ Whenever it is full

3 □ Other, please specify……..

16. If "No toilet", where do you dispose of human waste?

1 □ In the river

2 □ In the street

3 □ In the field

4 □ Use plastic (PVC) bag

5 □ Use neighbor's latrine

6 □ In Public Toilet

7 □ Other, please specify . . . . . .

8 □ I don't know/ No answer

17. If you don't have a toilet yet, are you willing to borrow money in order to build a sanitary household toilet?

1 □ Yes, why?.....

2 □ No, why not?.....

3 □ I don't know/ No answer

18. Would you share a toilet in common with one of your neighborhoods?

1 □ Yes, Why?.....

2 □ No, why not?.....

3 □ I don't know/ No answer

19. What is the influence of using the river or field as a toilet on the environment?

Note: Multiple answers possible!

1 □ Spreads dangerous diseases?

2 □ Pollutes the water source?

3 □ Is not harmful?

4 □ Other, please specify . . . .

5 □ Don't know?

C. WASTE WATER DRAINAGE

20. What are the sources of waste water around your house?

1 □ Daily activities in the household (bathing, cleaning, washing)

2 □ Nearby Hospital

3 □ Nearby Industrial area

4 □ Construction in neighborhood

5 □ Nearby Market

6 □ Other, please specify . . . . . .

21. Is there any public sewerage system around your house?

1 □ Yes (continue with next questions)

2 □ No→ GO TO QUESTION 25

22. Is your house connected to a drainage system?

1 □ Yes

2 □ No → GO TO QUESTION 25

23. If your house is connected to a drain, what type of drainage system is it?

1 □ Open drain

2 □ Covered drain

3 □ Drain leading to a pond, canal or garden

4 □ Other, please specify……..

24. How long have you been connected?

1 □ < 1 year

2 □ 1 to 3 years

3 □ >3 years

4 □ I don't know/ No answer

25. Are you satisfied with the current drainage situation around your home/street?

1 □ Yes, Why?..... → GO TO QUESTION 27

2 □ No

3 □ I don't know/ No answer

26. If No, what are the problems?

1 □ Mosquitoes breeding

2 □ Spread diseases

3 □ Bad odors

4 □ Polluted water source

5 □ Flooding

6 □ Other, please specify……..

27. As a general principle, do you agree that waste water should be treated (cleaned) before it returns to the river or sea?

1 □ Yes

2 □ No

3 □ Don't Know / No answer

28. Are you willing to pay for waste water treatment?

1 □ Yes, why?.....

2 □ No, why not?.....→ GO TO QUESTION 30

3 □ I don't know/ No answer→ GO TO QUESTION 30

29. How much are you willing to pay for treating waste water per m3?

1 □ > 5.000 VND

2 □ > 3.000 - 5.000 VND

3 □ > 1.000 - 3.000 VND

4 □ Up to 1.000 VND

5 □ Other

6 □ I don't know/ No answer

D. SOLID WASTE

30. Do you use solid waste collection service?

1 □ Yes (continue with 31, 32)

2 □ No → GO TO QUESTION 33

31. How often is the solid waste collected?

1 □ Every day
2 □ 2-3 times per week
3 □ Once per week
4 □ Other, specify
5 □ Don't know/No answer

32. How much are you willing to pay for solid waste collection service per month?

1 □ Nothing
2 □ < 10,000 VND
3 □ 10,000 - < 20,000 VND
4 □ 30,000 VND or over
5 □ Don't know/No answer

33. If you don't use solid waste collection service, how do you process the solid wastes?

Note: Multiple answers possible!

1 □ Bury it
2 □ Burn it
3 □ Throw it in the field
4 □ Throw it in the river, lake, ditch
5 □ Other, please specify. . . . . .
6 □ I don't know/ No answer

34. Do the above mentioned method/s of solid waste processing change in the wet season or during floods?

1 □ Yes, which method/s? and in what way?.....
2 □ No

35. Are you satisfied with the current solid waste management practices in your area?

1 □ Yes→ GO TO QUESTION 39
2 □ No
3 □ I don't know/ No answer→ GO TO QUESTION 39

36. What do you suggest to be improved?

1 □ Hygiene problems
2 □ Frequency of collection
3 □ Costs of collection should be reduced
4 □ Blocked drains

5 □ Water pollution

6 □ Smell

7 □ Flies

8 □ Other, please specify…….

37. Are you willing to pay for improved solid waste collection service?

1 □ Yes

2 □ No → GO TO QUESTION 39

3 □ Don't know/No answer

38. If yes, how much are you willing to pay per month?

1 □ < 10,000 VND/month/household

2 □ 10,000 - < 20,000 VND/month/household

3 □ 20,000 VND/month/household or over

4 □ Other

5 □ Don't know/No answer

39. What are some possible solutions to existing solid waste management problems?

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……

PART III INFORMATION, EDUCATION, COMMUNICATION PRACTICE

40. Did you receive any information in the last six months on the following issues?

Note: Multiple answers possible!

Information about	Yes	No	Don't know/ No answer
1. Piped water			
2. Wastewater			
3. Sanitation			

41. If yes, what kind of information did you receive?

1 □ Rights in regard to waste water disposal?

2 □ Duties in regard to waste water disposal?

3 □ Other (please specify) .....

42. If yes, how often did you receive this information in the last 6 months?

Frequency of information receiving	Piped water	Wastewater	Sanitation
1 □ 1 time			
2 □ 2-3 times			
3 □ 4-5 times			
4 □ More than 5 times			
5 □ I don't know/ No answer.			

43. If yes, from what sources did you get the information?

1 □ Neighbors/Friends

2 □ Public Works Company

3 □ Health communicator/ volunteer

4 □ Respected people in the Ward

5 □ TV/Radio/Newspaper/Loudspeaker (please circle if applicable)

6 □ Member of mass organization (name agency)……

7 □ Other, please specify . . . . . .

44. Who is the most influential person to communicate about water, waste water & sanitation?

1 □ Head of Ward

2 □ Representative of the Company

3 □ Health worker

4 □ Member of Women's Union

5 □ Member of Youth Union

6 □ Respected person

7 □ Other, please specify. . . . . ..

45. How often are public meetings held in your Ward?

1 □ Never

2 □ Monthly

3 □ Quarterly

4 □ > 6 months

5 □ Other

6 □ I don't know/ No answer

46. Is there a loudspeaker system in your Ward?

1 □ Yes

2 □ No

47. If 'Yes', What is for you the most suitable time for listening to broadcasts from the loudspeakers?

Note: Multiple answers possible!

1 □ Early Morning

2 □ Mid Morning

3 □ Noon

4 □ Afternoon

5 □ Evening

6 □ Other

48. Ranking exercise: How do you rate the following channels for the Company to communicate with you (the households)?

Note: Multiple answers possible!

1- Ineffective; 2- Moderately effective; 3- Very effective

Channel	1-Ineffective	2- Moderately effective	3- Very effective
1 Home visit			
2 Neighborhood meeting			
3 Ward meeting			
4 Loud speakers			
5 Poster/			
6 Leaflet/			
7 Newsletter			
8 Radio			
9 TV			
10 Newspaper			
11 Notice Board			
12 Public Campaign			
13 Other (Please specify) ……			

PART IV CUSTOMER SERVICE SATISFACTION ON PIPED WATER, WASTEWATER & SOLID WASTE SERVICES

49. Are you satisfied with the water supply, wastewater and solid waste services?

Note: Multiple answers possible!

		1- Dissatisfied	2- Moderately Satisfied	3- Very Satisfied
1	Water Supply Service?			
2	Wastewater/drainage Service?			
3	Solid waste Collection Service?			

Complaints

50. Have you ever complained to the Company about one or more of the following services? IF YOU HAVE NEVER COMPLAINED GO TO QUESTION 56

		YES	NO
1	Water Supply Service		
2	Wastewater/drainage Service		
3	Solid waste Collection Service		

51. What have you complained about Water Supply? (mark if it applies)

1	☐	Billing/Charges	6	☐	Poor pressure
2	☐	Incorrect Meter reading	7	☐	Poor installation
3	☐	No water and/or discontinuity of supply	8	☐	Incorrect meter operation
4	☐	Leaks (before the meter)	9	☐	Other (name)
5	☐	Water Quality			

52. What have you complained about Wastewater/drainage? (mark it if applies)

1	☐	Poor Drainage	5	☐	Bad odour
2	☐	Blocked Pipes	6	☐	Billing/Charges
3	☐	Open manhole	7	☐	Other (name)
4	☐	Flooding			

Courtesy of Company's staff

53. How would you rate the courtesy of Company staff who handled your complaint?

		Very Poor	Poor	Fair	Good	Very Good
1	Water Supply Complaint					
2	Wastewater/drainage complaint					
3	Solid waste Collection/management					

Effectiveness of complaint resolution

54. How effective was the complaint resolution?

		Not resolved	**Partly resolved**	**Resolved**
1	Water Supply Complaint			
2	Wastewater/drainage complaint			
3	Solid waste Collection/management			

Speed of resolution

55. From the date that you made your complaint, how long did it take for the Company to resolve it?

		1 day	**2-3 days**	**4-7 days**	**8-14 days**	**>14 days**
1	Water Supply Complaint					
2	Wastewater/drainage complaint					
3	Solid waste collection and management					

56. Do you have any ideas to improve and the water supply and waste water services?

……
……
……

END OF INTERVIEW

Thank you for your cooperation!

APPENDIX 4: IN-DEPTH INTERVIEW GUIDELINES

IN-DEPTH INTERVIEW QUESTIONS FOR WARD PEOPLE COMMITTEE

I. General information

1 The Socio – Economic situation in 2007

2 The general situation of environmental sanitation in Ward

3 The general assessment of the environmental sanitation situation

II. Specific information

1 Infrastructures of wastewater/solid waste treatment

1.1. What do you assess on the infrastructures of wastewater/solid waste treatment in Ward?

1.2. What do you think of the management of wastewater treatment from the hospital and industrial areas?

1.3 What do you assess the management of wastewater/ solid waste treatment, sanitation and public light system, trees and parks?

2 Information – Education – Communication Activities?

2.1. Do you have any activities of IEC on wastewater/ solid waste treatment, sanitation in your Ward?

2.2. Do you have any the order to combine for IEC among the Mass Organizations on the wastewater/solid waste treatment and environmental sanitation?

2.3. Are there any results? Are there any methods to assess?

2.4. What do you think the roles of people to combine operating on wastewater treatment and protecting environment?

2.5 How do you encourage people to participate in IEC on protecting environment and public schemes?

III. Orientation on wastewater/solid waste treatment

1 What do you think of the CTWSSC will operate in the market mechanism?

2 Are there other programs on Environmental sanitation in the city? What kinds of activity? And belong to which organizations and countries?

3 Are there any provisions for the company? (Human resources, policies and combine with other organization in propaganda)

4 Do you have any orientation for wastewater treatment from hospital, Industrial areas?

5 Do you have any policies to maintenance - monitoring and evolution for the scheme after it operating?

IN-DEPTH INTERVIEW QUESTIONS FOR LOCAL LEADERS OF TRA VINH TOWN

I. General information

The Socio- Economic situation of the district in 2007

II. Specific information

1 Infrastructures of wastewater/solid waste treatment:

1.1. How do you assess the infrastructures of wastewater/solid waste treatment in city?

1.2. What do you think of the management of wastewater treatment from the hospitals and industrial areas?

1.3 How do you assess the management of wastewater/ solid waste treatment and sanitation?

2 Information – Education – Communication Activities?

2.1. How do you think about the IEC activities from the Mass organizations on wastewater/solid waste treatment and environmental sanitation?

2.2. Do you have any policy/ order to combine IEC among the Mass Organizations on the wastewater/solid waste treatment and environmental sanitation?

2.3. Are there any results? Are there any methods to assess?

2.4. What do you think of the roles of people to participate into operating on wastewater treatment and protecting environment?

2.5 How do you encourage people to participate in IEC on protecting environment and public schemes?

III. Orientation on wastewater/solid waste treatment:

3.1. What do you think of the CTWSSC will operate in the market mechanism?

3.2. Are there other programs on Environmental sanitation in the city? What kinds of activity? And belong to which organizations and countries?

3.3. Are there any provisions for the company? (Human resources, policies and combine with other organizations in propaganda)

3.4. Do you have any orientation for wastewater treatment from hospitals, Industrial areas?

Thank you!

APPENDIX 5: FOCUS GROUP DISCUSSION GUIDELINES

ISSUES TO BE DISCUSSED IN FOCUS GROUP DISCUSSION

I. Behavior related to wastewater and sanitation

1 Is there a public sewerage/drainage system around your house your house connected to the public sewerage/drainage system?

2 Are there industrial areas, hospital, construction in your neighborhood ?

3 Have you effected by disposing wastewater from these sources (health, traffic, daily activities, business)

4 How do you think of the situation of sanitation in your neighborhood?

5 And how do you assess the activities of sanitation?

6 How much do you pay for the activities of sanitation per month?

7 What do you think of wastewater treatment's payment (the necessarily payment, the cost of payment, the procedure of payment, and the time of payment)

II. Information – Education – Communication

1 Are there any activities of IEC on Wastewater, solid waste, and sanitation currently?

2 What kinds of method, facilities? And who are responsible?

3 According to you, what kinds of benefit which these activities of IEC bring to you in wastewater, solid waster treatment and sanitation?

4 What kinds of information will be appropriated with you and other people in neighborhood? (the contents and forms of communication)

5 What kinds of communicating form will be appropriated in your condition and the other people in your neighborhood?

6 What do you think about the role of people in IEC on sanitation (asking them how do they stop throwing the garbage into canal/river

III. Improvement

1 The most important thing to do following:

- Clean Water supply
- Wastewater treatment
- Drainage system
- Establishment and improvement the solid waste collection service
- Other schemes (specific)

2 Why do you think it is the most important thing?

3 Do you have any suggestions for wastewater treatment and sanitation currently?

4 Do you have any suggestions for improvement?

5 What kind of community solutions which can contribute to the program?

Thank you very much!