

**PROJECT**

**BUILDING MUTUAL ACCOUNTABILITY IN URBAN WATER SECTOR**

**WATER CONSERVATION AND BETTER MANAGEMENT**

**PRACTICES AT HOUSEHOLD LEVEL**

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**Pre-Intervention Households Survey Report of Saddar Town**

**JANUARY 2012**



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SECTION ONE  
**Introduction**

**1.1 Study Background**

It is crucial to bring together government user groups, service delivery agencies and other stakeholders on a shared platform where they can voice their concerns and find possible solutions openly and equally and move forward together, rather than against each other. The Project goal, therefore, is to pave the way for the refinement and acceptability of the concept of mutual accountability.

This means a more holistic approach to water resources amongst the stakeholders, changing the way people think and behave, and showing that groups that usually have a trust deficit can come together, work together and make themselves accountable to other groups.

Mutual accountability will thus ensure that the citizens of Karachi consume and manage water in a conscientious manner. This serves a twofold purpose:

1. It ensures that all citizens have safe and sufficient water resources available to them for all essential purposes and
2. It ensures that there are sufficient and safe water resources for future generations of Karachi citizens.

Mutual accountability will also help to create a system of management and consumption of water resources that promotes conservation and conscious consumption between all competing users and uses in order to address the water scarcity issues.

It will support ecological sustainability and the development of a safe, sufficient and environment friendly Karachi for generations to come.

The first phase of the pre-intervention survey on “Water Conservation and Better Management Practices” was initiated at the household level in the month of March. Phase 1 of the survey included the study design, pretesting, finalization of tools, training of data collectors and data collection.

A post-interventional survey will be conducted in month 13 of the project to see what changes have occurred as a result of the awareness raising interventions on water conservation and management made in the households and schools.

**1.2 Area Profile of Saddar Town**

According to the 1998 census the total population of Saddar Town was 616,151. The estimated current population of the Town in 2010 was approximately 764,027 (given the current population growth trend of 2 percent).

Saddar Town which is one of 18 administrative Towns of Karachi mega city, includes the old town areas of Kharadar, commercial area of Saddar and the newly developed areas of Clifton and Kehkashan. The old areas such as Union Council Old Hajji Camp, Garden,

Kharadar, Nanakwara, & Gazdarabad are thickly populated with people based in flats - meaning smaller areas containing larger populations. This densely populated town in the central part of old Karachi is bordered by Jamshed Town and Clifton Cantonment to the east, Kemari Town and the Arabian Sea to the south and Lyari Town to the west. It has been an administrative Town since 2001. The 11 UCs of Saddar Town is as under:

**Union Councils (UCs) of Saddar Town**

UC No.	Names of UCs
1.	Old Haji Camp
2.	Garden
3.	Kharadar
4.	City Railway Colony
5.	Nanakwara
6.	Gazdarabad
7.	Islampura/Millat Nagar
8.	Saddar
9.	Civil Lines
10.	Clifton
11.	Kehkashan



Saddar town is largely populated by trading communities such as Memons, Marwaris, Ghanchis and Gujratis besides Balochis, Sindhis and Lasis and it has also a significant number of people who migrated from India. Eminent social worker Abdul Sattar Edhi also belongs to this town.

**1.3 Study Design and Methodology**

The pre-intervention survey on ‘Water Conservation and Better Management Practices’ used more than two research methods with a view to double (or triple) checking results on the same phenomenon, called triangulation research technique. The study employed in both quantitative (inquiry) and qualitative (validation) research methodologies for cross examination of the results.

Quantitative research method was adopted in a household survey, while the FGDs were conducted (qualitative research) with the women of Saddar Town for credibility of the quantitative data analysis.

A knowledge, attitude and perception (KAP) survey of water conservation and management was taken up as the third research technique with the members of Saddar Town Area Water Partnership (AWP) Steering Committee.

Triangulation is a powerful technique that facilitates validation of data through cross verification from more than two sources. In particular, it refers to the application and combination of several research methodologies in the study of the same phenomenon. By combining multiple observers, theories, methods, and empirical materials, researchers can hope to overcome the weakness or intrinsic biases and the problems that come from single method, single-observer and single-theory studies.

The purpose of triangulation in this research study is to increase the credibility and validity of the results. This has been necessitated because the water supply and sanitation situation in the area has deteriorated significantly since the rollback of the elected local government system and due to the unprecedented monsoon rains in the southern half of the country. Under the consequent scenario, many of the responses to the household survey may no longer reflect the realities on the ground. Focus Group Discussions (FGDs) have been designed to determine the prevailing/current water conservation and management practices, after the rollback of the elected local government system, which has resulted in significant deterioration of the water and sanitation situation on the ground. The findings of pre-intervention survey on Water Conservation and Better Management Practices at the household level are being supplemented and validated through qualitative data collection, to reflect the changed situation on the ground.

### **1.3.1 Sample Coverage**

The pre-survey was conducted in all 11 UCs of Saddar Town. The survey covered 100 households per UC across the 11 UCs, covering a total sample size of 11000 households. In each of the 100 households covered, 1 woman (preferably elder/head of the household) was interviewed to determine their current water conservation and management practices. The validation exercise covered a total of 11 FGDs with the local community women, one in each UC.

### **1.3.2 Research Tools and Pre-testing**

Three research tools were used at the household level for water situation analysis:

- Tool-A : Family Form
- Tool-B : Pre- Intervention Survey Form
- Tool-C : FGD Guidelines

#### *Annex – 1 Research Tools*

The questionnaire and guideline was first developed in English then translated into Urdu. The draft Urdu tools were pre-tested in the project area sites. This entailed pertinent changes, re-structuring and additions to the survey form that facilitated more efficient administration of the survey. After pre-testing the tool was reviewed for any final amendments in the finalized Urdu versions.

## **1.4 Training of Data Collectors and Field Work**

### **1.4.1 Training of Data Collectors**

The survey team consisted of a local supervisor and 22 data collectors for the 11 UCs. The data collectors were identified and selected by the members of Saddar Town WWN, while the Project Officers were hired by Hisaar Foundation for research and field related activities.

The data collectors and supervisor were extensively trained by the Project Officers in their respective UCs to carry out the household survey. They were accompanied by senior team members of Hisaar Foundation for the training sessions. The in-house training took place for a duration of 2 days, while an additional day was assigned to take the field teams into the field for tool administration.

A fieldwork plan was devised by the Project Officers and shared with the field supervisor and data collectors, clearly indicating the responsibilities of each member of the field team. This field plan was also shared with the Project Advisor.

A Project Officer was independently assigned to cover each UC. The overall supervision of the survey was the responsibility of the Project Officers who spent bulk of the time in the field. The data collectors were continuously updated by the their field supervisor and the field teams were provided overall guidance in case of ambiguity in questions as well as in selection of households. All the filled/completed tools covered by the data collectors were checked by the Project Officers on a daily basis.

### **1.4.2 Field Work**

The households were randomly selected from the areas surrounding the government schools identified in each UC, where the survey would also be carried out and the school activation programme initiated. The selection of households was based on the presence of at least one woman engaged in household work.

The household survey commenced in the month of March and was completed in May 2011. The total data collection was completed in 7-8 days in each UC simultaneously.

The KAP survey commenced in the middle of June and was completed in the end of June 2011. The total 20 members of the Partnership were interviewed.

The focus group discussions (FGDs) began in July and completed in December 2011. The FGDs covered 10-12 women participants from the selected UC. Participants for each FGD were recruited from different socio-economic, ethnic and age groups.

## **1.5 Data Entry, Processing and Tabulation**

Data compilation process included developing a database for data entry, devising a pre-coding list, cleaning and processing on SPSS and developing a tabulation plan. The entire process was managed by the team leader assisted by a data entry manager. Data entry was carried out by a team of experienced data entry operators hired from Raasta Development Consultants network, followed by detailed tabulation of data sets.

The FGDs were transcribed from local language to English and compiled directly from the transcripts for content analysis.

## **1.6 Analysis and Report Writing**

The output of the study report is as follows:

Section One	Introduction
Section Two	Household Survey
Section Three	KAP Survey

## **1.7 Constraints**

During the household data collection, a few problems were encountered. Due to belief of some groups that women should not be interviewed and voice their opinion, in some UCs, the project team and data collection team heads first had to convince the male heads and then the data was collected.

Due to the local government administration being in a state of flux since July 2011, the survey activities could not be executed on time. First the Town system was abolished and a Commissioner system introduced. Then the administration system once again reverted to the Town System. While the Town system has been brought back, it is no longer an elected local government one. This was a major reason for delay in completion of the survey.

The truncated local government system, the deteriorating infrastructure, the violence and the monsoon rains created further havoc in the city, causing the city to completely shut down many a times. All such situations severely affected the project, changing the realities on the ground. Pre-survey activities were therefore delayed and disrupted, and field staff had to regroup and revisit their plan of action. For example conducted Focus Group Discussions (not originally in the project activities) to qualitatively equate and validate the survey because the realities on the ground had changed.



## SECTION TWO

# Profile of Karachi

### 2.1 Pakistan's Water and Sanitation Issues and Challenges

Pakistan has a population of 190 million of which 49 million are below the poverty line, 54 million do not have access to safe drinking water and 76 million have no sanitation<sup>1</sup>. In spite of recent improvement in economic management and growth and some progress on poverty reduction initiatives, per capita income is still around US\$ 750.

The quantity of water in Pakistan's water cycle remains essentially the same and, unless dramatic climatic changes occur, there is unlikely to be a net increase. What has changed drastically, though, is the population. By 2003 Pakistan's per capita availability of water had declined to the extent that it was categorized as a water scarce country.

**Population and Water**

Total population	190 million
Population rely on agriculture	98 million
Population below the poverty line	49 million
Population do not have access to safe drinking water	54 million
Population have no sanitation	76 million
Children die from water borne diseases each year	250,000 children

Source: Websites of Pakistan's government, [www.pakistan.gov.pk](http://www.pakistan.gov.pk) and the UNDP, [www.undp.org.pk](http://www.undp.org.pk).

Pakistan's water resources are derived from natural precipitation (rain and snow), surface water and ground water. It is the Indus River and its tributaries that constitute the main source of water supply in Pakistan. But against the average annual inflow of 140 Million Acre Feet (MAF)<sup>2</sup>, there is large annual fluctuation and seasonal variation. In addition groundwater yield is estimated to be 55 MAF, current extraction being 48 MAF. Thus the remaining ground water potential is about 7 MAF, representing a possible increase of about 14 per cent only.

Most of the urban water is supplied from groundwater except for cities like Karachi, Hyderabad, and parts of Islamabad, which mainly use surface water. System or line losses are a major issue in water supply of urban areas. In Karachi, for instance, losses are approximately 40 percent of the total bulk water supply to the city.

The quality of water supplied at the consumer point is poor as a result of contamination in the old and rusty distribution networks. Tests carried out by PCRWR, as part of a

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<sup>1</sup> **Population Stabilization, A Priority for Development**, UNFPA/ Ministry of Population Welfare GoP

<sup>2</sup> Surface Water Hydrology Directorate, WAPDA & IWASRI, **Internal Report No 98/1. Quoted in Pakistan Water Vision**

national water quality monitoring programme<sup>3</sup>, revealed that water in many cities of Pakistan was unsafe for human consumption due to bacterial and chemical contamination. Almost 50 percent of the samples in 17 cities were found to be unfit for human consumption. According to the study the overall deterioration in groundwater can be associated with indiscriminate and improper disposal of sewage and industrial effluents including persistent toxic synthetic organic chemicals, heavy metals, pesticides products, municipal waste, and untreated sewage water into freshwater bodies.

According to PSLSMS around 38 percent of sanitation systems in Pakistan are based on open-drains and only 8 percent of rural areas and 56 percent of urban areas have underground and covered drains.

**Sanitation Systems in Pakistan by Type**

Sanitation System	Urban (%)	Rural (%)	Overall (%)
Underground Drains	52	5	21
Covered Drains	4	3	4
Open Drains	37	38	38
No System	7	53	37
<b>TOTAL</b>	<b>100</b>	<b>100</b>	<b>100</b>

Source: Pakistan Social & Living Standards Measurement Survey 2007-08

NOTES: 1. Households connected to the drainage system indicated expressed as a percentage of the total number of households. 2. Totals may not add to 100 because of rounding.

Poor sanitation and sewerage systems are related directly to housing problems in the cities of Pakistan. The situation of wastewater and its management in Pakistan is appalling, and likely to get worse with the rising population. As only 2 percent of cities (population of over 10,000) have wastewater treatment facilities. The cities with treatment facilities, was estimated less than 30 percent of wastewater that receives treatment.

## **2.2 Karachi and Its Water Problems**

Karachi, the most populated city and the largest industrial centre in Pakistan, is also a typical example of the problems associated with water. It has grave scarcity of water and regularly witnesses riots in certain areas because of non-availability of water. There are certain areas in the city where water is sold at Rs.1000 to Rs.1500 per tanker. There are problems of proper maintenance of water supply. Bursting of the water supply pipes is very frequent and there are several localities in Karachi where no proper arrangement is available for disposal of effluents.

More than 50% of Karachi's population live in *katchi abadis* (squatter settlements) and most of them face severe shortage of water as well as the lack of proper sewerage system. However, the problems of improper disposal of sewerage and city effluents is not restricted only to the *katchi abadis* and many other areas of the city including the posh areas are also facing them.

<sup>3</sup> The study conducted by PCRWR in 2003 undertook water quality monitoring in 21 major cities, six rivers, and 11 storage reservoirs, canals, drains, and natural lakes.

Industrial effluents contain chemicals, and other elements that are harmful for health, soil and water bodies in the area. In particular coastal and marine pollution is very high. The absence of adequate means of disposal creates many problems like water spilling on streets, roads, around houses and in open spaces. This situation not only causes discomfort but is also a source of disease, inconvenience and environmental degradation.

### 2.2.1 Water Supply to Karachi

The present allocation of water for Karachi from the River Indus is 1200 cusecs (or 650 MGD). The distribution of this allocation is 880 cusecs for drinking water, 30 cusecs for steel mill and 37 cusecs for Port Qasim (a new port area). The balance yet to be drawn is 253 cusecs.

The sources of water supply for Karachi from the Indus are through greater Karachi water supply, Gharo schemes and additional water supply from K-I and K-II scheme. The other sources are the Hub River and Dumlottee wells. It is important to note that the net supply to the city is 383 MGDs after accounting for 30% loss of water.

The future position of water for Karachi is alarming. The overall picture till 2025 can be seen from the table below:

Year	Population (million)	Demand	Supply	Shortfall
2000	11	594	463	131
2004	12	648	547	101
2005	12.59	680	647	33
2010	14.6	788	647	141*
2015	17	918	647	271
2020	20	1080	647	433
2025	23	1242	647	595

\*New scheme of 100 MGD required in every five years

### 2.2.2 Sewerage in Karachi

In Malir and Lyari storm water channels were replete with fish upto 15 years ago but now they are nothing more than big drains for city and industrial waste and pollutants.

In urban areas sewage is collected both through piped sewers and open surface drains. The sewage is disposed off either to nearby water bodies, or to open depressions and fields. In areas where there is no collection system, soakage wells are used which often contaminate the groundwater.

The city of Karachi has undergone fast urbanization and industrialization during the last two decades and its coastal zone receives a large amount of untreated domestic as well as industrial wastewater. As a result, the local marine environment is highly polluted and the mangrove swamp ecosystem under severe threat.

The total sewerage generated by the city at present is 315 MGD. Out of this only 90 MGD is being treated so far, while 225 MGD is left untreated. The optimum designed capacity of sewerage treatment plants is 151 MGD and the shortfall in treatment is 164

MGD. At present approximately 20 MGD of sewage is treated at TPI, 32 MGD at TP-2 and 31 MGD at TP-3.

The low sewage flows reaching the existing works reflect operational problems with sewer collapses, blockages, diversions and leakages. These are all related to factors such as the type of sewage, the flow rates, and the lack of system integrity, mechanical problems and economic constraints. 83% of the potential sewage flow is unavailable at present for reuse.

### **2.2.3 Sources of Effluents and Solid Wastes**

#### **Solid Wastes**

The city of Karachi generates 6,000 – 8,000 tons / day of solid waste. Both the formal and informal sectors are involved in the collection, processing and disposal of solid waste at different levels. Thirty per cent of the solid waste is collected and disposed by Karachi Municipal Corporation (KMC) (now replaced by City Government), the remaining is dumped in storm drains, *nallahs*, nearby rivers and empty plots. KMC spends 40 per cent of the municipal budgetary allocation on solid waste collection and disposal.

The direct results of poor handling and management of solid wastes are:

- Spread of various diseases and epidemics.
- Overall degradation of the environment and lowered quality of human living.
- Breakdowns in public utility systems and blocked sewer lines causing blockage and sewage overflow.

However, there is also the economic side of this issue. The composition of solid waste is such that many of the waste components such as paper, plastic, tin, glass, aluminum etc. can be reused or recycled. Energy can also be produced from waste. There is good money to be made from solid waste, provided it is properly handled.

#### **Industrial Wastes**

The major industry sectors responsible for water pollution are pulp & paper, textiles, fertilizers, cement and sugar. Industries identified as generating toxic and hazardous solid wastes are pesticides, dyes and pigments (e.g. textile Industry), pharmaceuticals, organic chemicals (Refineries), steel, non ferrous metals (e.g. lead, copper and zinc), and caustic soda (e.g. manufacturer of soaps).

Most of the industrial waste gets disposed in drains or in the sea. The coastal environment and aquaculture is thus exposed to severe pollution. The absence of any strict regulations and enforcement mechanisms are major impediments.

One of the most hazardous of all industrial wastes is tannery waste. The tanneries not only generate large volumes of liquid, they also generate different types of solid wastes, many of which create serious pollution problems.

## **Domestic Wastes**

Most of the city population is not connected to trunk sewers. More than 50 per cent of trunk sewers are overloaded and, more significantly in most cases, the trunk sewers are extensively blocked. This is due to poor maintenance and sewage overflows into surface drains and natural watercourses.

Residential waste generally consists of:

- Food wastes such as animal, fruits or vegetables residues (also called garbage) which results from the handling, preparation, cooking and eating of foods. This kind of waste is biodegradable.
- Non-biodegradable but combustible solid waste resulting from residential activities consists mainly of paper, cardboard, plastics and garden trimmings.
- Non biodegradable and non-combustible household waste, which is usually made up of items such as glass, tin / aluminum cans and occasionally construction waste.
- Waste consisting of materials remaining from the burning of wood, coal, coke and other combustible waste

### **2.2.4 Institutional Setup of Water and Sewerage in Karachi**

The Karachi Water and Sewerage Board (KWSB) was placed under administrative control of the Local Government department, Government of Sindh in 1996. Within the process of devolution KWSB was also devolved and it has become one of the group offices of City District Government Karachi (CDGK). A major step has been the expansion of the domain of KWSB to cover entire Karachi. They now attend the growing *katchi abadis*, housing societies, rural areas and cantonment areas also.

The major functions of KWSB are:

- Bulk production, filtration, transmission, treatment and distribution of water
- Collection, pumping, treatment & disposal of sewage as per NEQS limits
- Billing and collection of water & sewerage charges as per approved tariff of the provincial government of Sindh

SECTION THREE

## Household Survey

### 3.1 Family Profile

This section provides demographic and socio-economic characteristics of the sample population in the household survey. It presents age-sex distribution, marital status, educational status, monthly earnings and employment status of each family member.

#### 3.1.1 Age-Sex Distribution and Marital Status

Age and sex of each household member were explored and the number of married population was estimated by assessing the marital status of the population (15 years and above).

#### Findings and Analysis

According to the sample population, the proportion of males to females was 49.9 percent to 50.1 percent, while the sex ratio was 99.6 males per hundred females. The average family size was 5.5 (from a population of 6065 out of 11000 households).

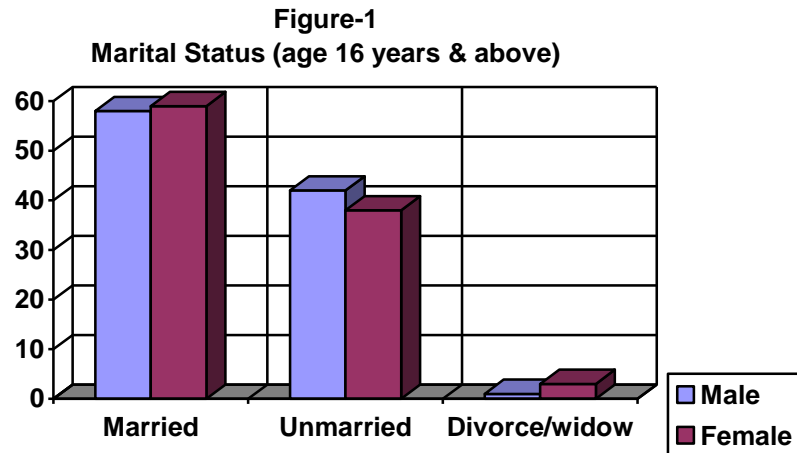
The dependency ratio was 301 which implies that for every one bread earner, there were about 3 dependents<sup>4</sup>.

**Table – 1**  
**Age - Sex Distribution**

	Male		Female		Total	
	N	%	N	%	N	%
0 – 4	193	6	159	5	352	6
5 – 9	324	11	297	10	621	10
10 – 14	460	15	535	18	995	16
15 – 19	480	16	504	17	984	16
20 – 24	264	9	321	11	585	10
25 – 29	176	6	214	7	390	6
30 – 34	191	6	210	7	401	7
35 – 39	183	6	236	8	419	7
40 – 44	210	7	226	7	436	7
45 – 49	250	8	184	6	434	7
50 – 54	150	5	59	2	209	4
55 – 59	47	2	35	1	82	1
60 – 64	61	2	38	1	99	2
65 – 69	11	0	6	0	17	0
70 – 74	19	1	12	0	31	1
75 & above	8	0	2	0	10	0
<b>Total</b>	<b>3027</b>	<b>100</b>	<b>3038</b>	<b>100</b>	<b>6065</b>	<b>100</b>

<sup>4</sup> Dependency ratio is calculated through a formula by assuming that total population is dependent population (males who are earning, are also dependent upon themselves) and the economically productive population constitutes only males (between 15-64 years).

A total of 59 percent of females and 58 percent of males were reportedly married. Results showed not much difference in marital status of male and female in the sample population. Not much difference between marital status of male and female may be due to the urban trends of single marriages of men.



### Conclusions

The above findings show large family sizes, and a high proportion of dependent population. However more than half the population of reproductive age is found married. There is not much difference between the number of married males and married females due to urbanization.

### 3.1.2 Educational Status of Children and Adults

Respondents were questioned about the level of education of each member of the household. For the purpose of comparison, the education level was categorized as follows:

- Adult education (age 17 years and above)
- Child education (age 5-16 years)

### Findings and Analysis

#### Educational Status of Children (age 4-16 years)

A total of 14 percent boys and girls were not attending school. About 41 percent boys and 38 percent girls were enrolled at the primary level, while 23 percent boys and 26 percent girls were enrolled at the middle level. However at the secondary level only about 20 percent girls and 18 percent of boys were found enrolled, implying a high drop out rate at the secondary level.

**Table – 2**  
**Educational Status of Children (age 4 to 16 years)**

	Male		Female		Total	
	N	%	N	%	N	%
Primary*	435	41	429	38	864	39
Middle**	244	23	298	26	542	25
Secondary***	190	18	230	20	420	19
Intermediate	31	3	22	2	53	2
No education	151	14	159	14	310	14
No response	4	1	4	0	8	1
<b>Total</b>	<b>1055</b>	<b>100</b>	<b>1142</b>	<b>100</b>	<b>2197</b>	<b>100</b>

\* upto class 5

\*\*upto class 8

\*\*\* upto matric

Educational Status of Adults (age 17 years and above)

A total of 11 percent males and 20 percent females were reportedly uneducated, while only 1 percent females reportedly received non-formal education.

More than half of the males and females had their education up to intermediate or secondary level i.e. 59 percent males and 45 percent females got education up to intermediate or secondary standards. About 13 percent males and 10 percent females reported completing their graduation. Only 2 percent males and 3 percent females attained education at the level of MA/MSc.

**Table – 3**  
**Educational Status of Adult (age 17 years and above)**

	Male		Female		Total	
	N	%	N	%	N	%
Primary*	57	3	131	7	188	5
Middle**	209	12	254	14	463	13
Secondary***	495	27	417	23	912	25
Intermediate	584	32	384	22	968	27
BA/BSc (Bachelor)	239	13	169	10	408	11
MA/MSc (Masters)	39	2	45	3	84	3
No formal	6	0	10	1	16	1
Quran Hafiz	1	0	0	0	1	0
No education	192	11	359	20	551	15
No response	3	0	3	0	6	0
<b>Total</b>	<b>1825</b>	<b>100</b>	<b>1772</b>	<b>100</b>	<b>3597</b>	<b>100</b>

\* upto class 5

\*\*upto class 8

\*\*\* upto matric

**Conclusions**

The pattern and trends of education among children and adults are almost the same with no difference in men/women's level of education.



### 3.1.3 Employment Status and Monthly Income

Employed population includes those engaged in remunerative work at a given time. Information regarding the level of earnings of both males and females was obtained.

#### Findings and Analysis

Only 7 percent females and 64 percent males were reportedly involved in remunerative work.

The highest proportion of employment for males was found in the private sector (44 percent), whereas only 15 percent males were found to be employed in the government sector.

Few males and females were also found in business, skill/craft and others, however more number of males were employed in these categories as compared to females.

**Table – 4**  
**Employment / Profession (age 16 years and above)**

	Male		Female		Total	
	N	%	N	%	N	%
Government service	285	15	57	3	342	9
Private service	857	44	57	3	914	24
Business	40	2	1	0	41	1
Skill / crafts	19	1	1	0	20	1
Others	49	3	7	1	56	3
Retired	3	0	0	0	3	0
No response	10	1	2	0	12	0
House wife	0	0	933	49	933	24
Unemployment	673	35	844	45	1517	40
<b>Total</b>	<b>1936</b>	<b>100</b>	<b>1902</b>	<b>100</b>	<b>3838</b>	<b>100</b>

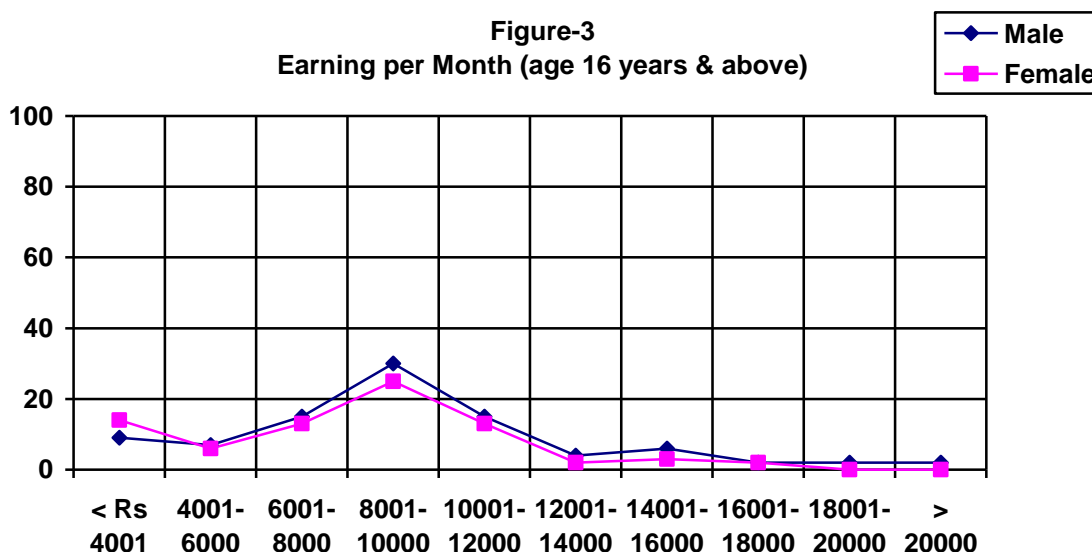
A majority of males (30 percent) and females (25 percent) earned between Rs 8,001-10,000, while more males were found in the income bracket of Rs 10,000-20,000 per month (29 percent males and 20 percent females).

More than a quarter of males (31 percent) and females (33 percent) were found in the low income as less than Rs 8,000.

**Table – 5**  
**Earnings / month (age 16 years and above)**

	Male		Female		Total	
	N	%	N	%	N	%
4000 and less	105	9	17	14	122	9
4001-6000	88	7	7	6	95	7
6001-8000	191	15	16	13	207	15
8001-10000	389	30	32	25	421	30
10001-12000	194	15	17	13	211	15
12001-14000	46	4	2	2	48	3
14001-16000	77	6	4	3	81	6
16001-18000	21	2	2	2	23	2
18001-20000	23	2	0	0	23	2
> 20,000	27	2	0	0	27	2
No response	102	8	28	22	130	9
<b>Total</b>	<b>1263</b>	<b>100</b>	<b>125</b>	<b>100</b>	<b>1388</b>	<b>100</b>

**Figure-3**  
**Earning per Month (age 16 years & above)**



## Conclusions

Private jobs are the greatest means of employment for males. Government jobs are the second main source of income for males in the Town. A considerable number of males are also not involved in any type of earning activity which shows few economic opportunities and unemployment.

Women constitute half the population of our society and their participation can be of vital importance. Negative attitude towards women's work is directly linked with the perceived role and status of women in a traditional society.

A low level of earning depicts lack of opportunities, skill training and education for both males and females. The whole picture of earning indicates that a large majority live at or below subsistence level, where they are just able to meet their basic needs for food, shelter and clothing.

### 3.2 Water Conservation and Management Practices at Household Level

This section provides water conservation and management practices of sample population at the household level. It presents water amenities and services data, source of drinking water, household water use behavior and perception data, issues/problems in relation to water, sources of water contamination and suggestions for improvement.

The triangulation of quantitative (HH survey) and qualitative (FGDs) data, findings and analysis of the survey are given below.

#### 3.2.1 Socio-Economic Profile

To determine the socio-economic profile of the households, respondents were asked about the housing structure, annual family income and expenditures for various utility services.

#### Findings and Analysis

##### Housing Structure

In HH survey half of the respondents were living in multi-storied housing system/ apartments, however the other half were living in single or double unit houses. Forty percent of the respondents were living in multi-storied housing system (less than 6 floors) at the time of survey, while 11 percent were living in high rise buildings (more than 6 floors). Thirty-six percent of the respondents were reported to live in single unit houses and 13 percent in the double storied houses.

Same type of housing structure was found among the FGD participants, a majority of participants in 7 areas were living in multi-storied apartments, while in remaining areas participants were residing in single unit housing systems.

**Table – 6  
Housing Structure**

	<b>Number</b>	<b>%</b>
Multi-story housing (less than 6)	443	40
Single unit housing	400	36
Double story housing	140	13
High rise (higher than 6)	116	11
No response	1	0
<b>Total</b>	<b>1100</b>	<b>100</b>

In HH survey more than half of the respondents owned their houses, while 41 percent were living in a rented house. Fifty-nine percent of the total respondents were residing in double room houses, while 22 percent were reportedly residing in single room dwellings.

### Annual Household Income

In HH survey 60 percent of the respondents reported their annual family income between Rs 10,000-20,000. More than a quarter (30 percent) also mentioned their annual family income as less than Rs 10,000.

**Table – 7**  
**Annual Household Income**

	<b>Number</b>	<b>%</b>
Less than 10,000	333	30
10,000 to 20,000	665	60
21,000 to 30,000	41	4
31,000 to 40,000	8	1
More than 40,000	7	1
Don't know	46	4
<b>Total</b>	<b>1100</b>	<b>100</b>

### Monthly Expenditure for Utility Services

In HH survey a large majority of respondents were paying less than Rs 500 monthly for gas services. 44 percent of respondents were paying Rs 1001-2000 for electricity, while 33 percent spent Rs 100-1,000 per month. Some 16 percent were paying Rs 2001-3000 for electricity bills.

**Table – 8a**  
**Expenses for Various Utility Services-GAS**

	<b>Number</b>	<b>%</b>
< 500	1013	92
500 – 1000	61	6
1001 – 1500	3	0
1501 – 2000	3	0
2001 – 2500	1	0
None	14	1
No response	5	1
<b>Total</b>	<b>1100</b>	<b>100</b>

**Table – 8b**  
**Expenses for Various Utility Services- ELECTRICITY**

	<b>Number</b>	<b>%</b>
100 – 500	68	6
501 – 1000	297	27
1001 – 1500	219	20
1501 – 2000	266	24
2001 – 2500	99	9
2501 – 3000	77	7
3001 – 3500	15	1
3501 – 4000	20	2
4001 – 4500	3	0
4501 – 5000	6	1
5001 – 10000	9	1
10001 – 16000	4	0
No response	17	2
<b>Total</b>	<b>1100</b>	<b>100</b>

Majority of the households (in HH survey) did not have telephone connections, while house maintenance was only charged to those who were living in apartment/flats. House maintenance was reported between Rs 100 – 1,000 by 46 percent of the respondents.

In HH survey only 28 percent of the total respondents were paying for water services. About a quarter of the households were charged less than Rs 200 for water.

**Table – 8c**  
**Expenses for Various Utility Services-WATER**

	<b>Number</b>	<b>%</b>
< 100	28	3
100 – 200	248	23
201 – 300	16	1
301 – 400	2	0
401 – 500	3	0
500 and above	10	1
None	788	72
No response	5	0
<b>Total</b>	<b>1100</b>	<b>100</b>

In HH survey, more than half of the respondents reported ‘don’t know’ in comparing the water rates with other utility charges. However 39 percent considered the current water tariff as ‘normal’.

**Table – 9**  
**Comparing the Current Water Tariff with Other Utility Payments**

	<b>Number</b>	<b>%</b>
Too high	13	4
Normal	121	39
Too low	6	2
No response	8	3
Don’t know	159	52
<b>Total</b>	<b>307</b>	<b>100</b>

## **Conclusions**

Residential structure of the households show half the respondents of the rising population of Saddar Town, as living in multi –storied housing system/apartments, in a single or double room dwelling. Lower income level and higher expenditures to meet the basic facilities of an urban area indicates that the large majority of sample households live below survival level.

### **3.2.2 Sources of Water Supply and Sanitation Facilities**

Facilities and services of water utilization were explored in the sample households.

#### Water Supply and Sanitation System

Respondents were asked about the household water supply system i.e. source of

household water, supply of water/regularity, amount of water they were getting, fulfillment of water need for households, priority of water use, shortage, rating of existing water system, major appliance use in the households and sanitation system.

### Findings and Analysis

In HH survey, a tap inside the house was reported by 89 percent of the respondents as the major source of water supply. Only 8 percent reported well/boring as the sources of water, while very few respondents also mentioned tankers, water vendor (on donkey/horse carts) and tap outside house (own/community taps) as the source of water.

In HH survey a large majority of the respondents who had water source inside their house were receiving water regularly. Out of those households who received water regularly, 91 percent reported that they were getting water daily. Majority of households where water supply was found daily had tap inside house. Some reported to get water after 2 days, while few also mentioned after 1 day, after 3 days and once a week.

According to FGD findings more than half of the participants in 9 areas were not getting pipe water, while less than half of the participants in 5 areas were getting pipe water. Getting water from KWSB pipelines is found not so easy because a large majority of them using water pressure boosters or suctioning motors to fetch the water from main line to their door steps. Most of them reported that water was suctioned for 30-60 minutes after every 1-2 days. All participants were getting water regularly through suctioning piped water.

In 7 out of 11 areas less than half of the FGD participants were using boring water, which was brackish, but were getting regularly. Furthermore these participants (4 areas) mentioned that either supply of water from tap was discontinued or they were getting dirty/sewage water mixed with the pipe water. Some of the participants in 4 areas also bought water from *mashki* for Rs 600 -800 per month for washing.

***There is total disparity in both the data sources, therefore if we analyzed both the data , it can be concluded that in the HH survey people felt that the use of suctioned pumps to fetch the water at their door step is legal and its their right.***

**Table – 10  
Major Source of Household Water Supply**

	Number	%
Tap inside house	988	89
Tap outside house (own)	18	2
Tap outside house/community	7	1
Boring /Well	91	8
Tankers	38	3
Water vendor (donkey/horse cart)	33	3
No response	1	0

\*multiple response

**Table – 11  
Received Water Regularly**

	<b>Number</b>	<b>%</b>
Yes	998	91
No	91	8
No response	11	1
<b>Total</b>	<b>1100</b>	<b>100</b>

During HH survey only 2 respondents reported that their neighbours shared their water sources daily for drinking purpose. While in two areas a half of FGD participants mentioned that their neighbour also shared their water source to fulfill their household needs.

Almost all the respondents in HH survey were satisfied and reported that all their household needs were covered in the current supply of water they were getting. Only 16 respondents reported negatively regarding the coverage of household needs in the current supply of water they were getting. Majority mentioned that there was shortage of water for laundry purpose, while some also mentioned for house cleaning and washing of porch.

In 4 areas majority of FGD participants reported that the amount of water they were suctioning from pipe lines was enough for all household needs. While in 5 areas a large majority of women reported that the boring water covered all their HH needs, except for drinking and cooking.

***Both the data sources showed that HHs suctioned an adequate amount of water from taps which covered most of their household needs. While in some cases tap water was inadequate for laundry and house cleaning. However, the boring water was not drinkable and used for cooking at all.***

**Table – 12  
Cover all Household Needs in the amount of Water Get**

	<b>Number</b>	<b>%</b>
Yes	1084	99
No	16	1
<b>Total</b>	<b>1100</b>	<b>100</b>

**Table – 13  
Shortage for**

	<b>Number</b>	<b>%</b>
For laundry	11	68
For washing of porch	1	6
For house cleaning	2	13
No response	2	13
<b>Total</b>	<b>16</b>	<b>100</b>

For a majority of respondents in HH survey following were the priorities for the use of water:

- First - Drinking
- Second - Cooking

- Third - Sanitation
- Fourth - Cleaning

According to FGD results households where sweet pipe water was being supplied (no matter in what quantum), their first priority was to store water for drinking and cooking and then for cleaning and sanitation. However the boring water was mostly unusable for drinking or for cooking because of salt sediments, therefore they stored water only for cleaning and sanitation.

**Table – 14**  
**Water Usage by Priority**

	Drinking Water		Cooking Water		Cleaning Water		Sanitation Water	
	N	%	N	%	N	%	N	%
First	900	81	180	17	12	1	8	1
Second	160	15	870	79	42	4	25	2
Third	28	3	36	3	707	64	327	30
Fourth	10	1	12	1	337	31	738	67
No response	2	0	2	0	2	0	2	0
<b>Total</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>

All respondents/participants (in both HH survey and FGDs) agreed that there is a greater shortage of water in summer season as compared to winter months.

**Table – 15**  
**Shortage of Water**

	Number	%
Summer	1097	100
Winter	3	0
<b>Total</b>	<b>1100</b>	<b>100</b>

In HH survey half of the respondents either rated the existing water supply system as 'Fair' or 'Poor'. While a majority of FGD participants in 5 areas of Saddar Town rated the existing water supply services as 'Very Poor' and participants in 5 areas rated as 'Fair'. Some participants rated the existing services of water supply as 'Good' (3 areas).

In HH survey a majority of households had sewerage system in place; 86 percent reported that their wastewater goes to central sewerage system. A reasonable number of respondents reported that the wastewater goes to roadside drains and nearby water bodies.

However the same trend was found in focus group discussions (FGDs), by further investigation majority of participants said that most of the time gutters were over flowing (in 8 areas of town) and drainage lines were broken and sewerage water mixed with drinking water lines (in 2 areas).



**Table – 16  
Waste Water**

	<b>Number</b>	<b>%</b>
Central sewerage system	940	86
Roadside drain	88	8
Nearby water body	3	0
Don't know	45	4
No response	24	2
<b>Total</b>	<b>1100</b>	<b>100</b>

## **Conclusions**

The above data shows that about more than half of the consumers had access to piped water regularly for an average family size of 5.5. A majority of them have installed a suction pump in their house to fetch water from the lines. Some of the residents also installed wide water lines when only half an inch is allowed. The use of heavy suction pumps by people living close to a pumping station distorts the distribution routine. Those areas at the tail end of the distribution line end up having no water.

The problem of contaminated water is also because of these illegal suction pumps in the Saddar Town. The problem is arising because the suction pump creates a vacuum and also sucks in other sediments from the sub-soil. The issue of contaminated water supply could only be resolved if the water lines at the consumers' end, with unapproved gauges, are removed and the use of suction pumps is banned in the city.

People living in apartments suffer the most from distribution flaws. Some houses receive enough water every day while others in the same neighbourhood are forced to buy water. A large number of apartments' residents are compelled to use underground water with the high levels of substances harmful for human health.

So there is a strong need to legalize the distribution system and discontinue the use of suction pumps at consumers' ends where households can easily access water recourse.

In the light of all these water related problems a majority of consumers are rating the existing water supply services from 'fair' to 'poor' and then 'very poor'. The crisis of water becomes more serious in summers when there is an acute shortage of water in most of the areas of Saddar Town. However according to the Karachi Water and Sewerage Board (KWSB), in summers the water being pumped into the city's reservoirs from the pumping stations is adequate and there is no cut in the amount of water supplied. The water crisis may be because of the fact that people use 30 percent more water during summer and six per cent of it is stolen.

## Drinking Water

Respondents were asked about the source of drinking water, amount of water supply they were getting, payment for drinking water, purification of water and rating of current public water services.

## **Findings and Analysis**

In HH survey a total 16 percent households reported to buy water for drinking purposes.

**Table – 17**  
**Major Source of Drinking Water**

	Number	%
Piped water	990	90
Bottle water	83	8
Tanker	82	7
Mushki (water vendor)	12	1
<b>Base</b>	<b>1100</b>	

A majority of the FGD participants in 5 areas (Saddar UC8, City Railway Colony UC 4, Old Haji Camp UC 1, Kharadar UC 3 and Gazdarabad UC 6) were buying water from vendors or consumed bottle water. While in 3 areas most of the women reported boring/well water the major source for drinking water. However, where households were getting piped water through suction pumps, participants mentioned that the same piped water was the major source for drinking.

In HH survey out of those whose main source of drinking water was 'bottle water' about half of the respondents (48 percent) paid Rs 500-1000, and 38 percent were paying Rs 1001-2000 monthly. However, of those who were using tanker water, 41 percent were paying Rs 1001-2000 and 28 percent were paying Rs 500-1000 per month. Some 17 percent of respondents also reported higher amounts i.e. more than Rs 2000 per month.

In FGDs an average 50-80 litres water per week was being used by half of the participants of 3 areas (Old Haji Camp UC 1, Kharadar UC 3 and Gazdarabad UC 6). The payment of drinking water varied from Rs 300-800 per month for sweet water from vendor or bottle water. In some areas participants paid as high as Rs 1,500 per month for drinking water.

**Table – 18**  
**Payment (Per Month) for Drinking Water by Sources**

	Tanker		Water Bottles		Mushki (vendor)	
	Number	%	Number	%	Number	%
< 500	2	2	6	7	0	0
500 – 1000	23	28	40	48	0	0
1001 – 1500	30	36	27	33	0	0
1501 – 2000	4	5	4	5	0	0
2001 – 2500	2	2	0	0	0	0
2501 – 3000	7	9	3	4	0	0
> 3000	5	6	0	0	0	0
Don't know	5	6	1	1	0	0
No response	4	5	2	2	12	100
<b>Total</b>	<b>82</b>	<b>100</b>	<b>83</b>	<b>100</b>	<b>12</b>	<b>100</b>

Seventy –nine percent of households were purifying the water before drinking. Out of these households a large majority were boiling drinking water for purification.

While in very few areas (3 areas) some of the FGD participants were reportedly boiling

water for drinking. Whereas in 8 areas none of the participants purified their drinking water.

However, it must be kept in mind that this question was very complex as often respondents seemed to say “boiled water” because it looked like the right answer. This would further lower the percentages of clean water consumption.

**Table – 19**  
**Purity of Water Before Drinking**

	Number	%
Yes	866	79
No	234	21
<b>Total</b>	<b>1100</b>	<b>100</b>

About half of the respondents in HH survey scored the PURITY, COLOUR and TASTE of water as ‘good’, while 39 percent also rated the PRESSURE of water as ‘good’. More than a quarter of the respondents stated the PURITY, COLOUR, TASTE and PRESSURE of water as ‘poor’ or ‘very bad’.

In 5 areas majority of the FGD participants rated the PURITY of current public water in the town either as ‘poor or very bad’. While in another 4 areas half of them reported the purity of water as ‘OK’. The COLOUR and TASTE of water in the town was reported by a majority of FGD participants either ‘poor or very bad’. An over whelming majority of the FGD participants reported the water PRESSURE as ‘poor/very bad’. A few FGD participants in 2 areas also reported that they were getting very good quality water.

**Table – 20**  
**Rate the Current Public Water Service**

	Purity		Color		Taste		Pressure	
	N	%	N	%	N	%	N	%
Excellent	20	2	22	2	17	2	38	4
Very good	179	16	129	12	166	15	246	22
Good	542	49	545	50	518	47	429	39
Poor	254	23	295	27	285	26	241	22
Very bad	28	3	12	1	18	2	27	2
No response	34	3	34	3	36	3	36	3
No reply	43	4	63	5	60	5	83	8
<b>Total</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>

## Conclusions

A large majority of the households did not have access to safe drinking water. Even in the case of households who were paying a substantial amount for bottle water or tankers, felt that the drinking water needed to be purified.

It is concluded that water that is supplied to these hapless consumers is insufficient and contaminated, and is not fit for drinking. The consumption of contaminated water is further likely to cause the spread of water-borne diseases especially among children which is already on the rise. Importance of consumption of clean drinking water through discussion with communities needs to enhance.

Lack of access to water for drinking purposes has proved to be an additional economic burden on the earnings of low-income households. And this is so because they usually end up paying more for drinking water than what people from higher-income brackets pay.

### 3.2.3 Water Amenities and Service

The respondents were asked to mention the amenities and services in their households and their improvement/maintenance.

#### Findings and Analysis

A large majority (96 percent) of respondents reported that they had ‘one’ kitchen in their households. While 78 percent of respondents mentioned that they had only one washroom in their house.

**Table – 21**  
**Number of Kitchen/Washroom in the Households**

	No of Kitchens		No of Washrooms	
	Number	%	Number	%
One	1061	96	852	78
Two	25	2	194	18
Three	6	1	27	2
More than Three	0	0	19	2
No response	8	1	8	1
<b>Total</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>

Some respondents reported that their flush tanks and taps leaked. Only 8 percent respondents complained about brown water running out of taps. More than half (51 percent) households were not receiving prompt maintenance for leaking taps and flush tanks.

A majority of the FGD participants in 9 areas and half of the participants in 2 areas mentioned that their flush tanks, taps and water tanks were leaking very often. Most of them received maintenance whenever needed. In 6 areas women reported that all water appliances, utensils, and even water motor and geyser were rusted/destroyed due to salty/*khara* water.

None of the respondent/participants either in HH survey or in FGDs reported presence of water meter in their apartments/houses. However some of the FGD participants reported to receive water/sewerage bill monthly (in 4 areas).

An overwhelming majority of FGD the participants in most of the areas of the town reported that ‘quality’ (clean/pure) was the first main aspect that they thought should be improved right away. However the second main aspects which they wanted dealt with immediately were reported as ‘pressure’ and ‘maintenance’ (repairing of broken/leakage in water lines).

## Conclusions

Majority of households had single kitchen and washroom in their houses, with one or two taps inside the house. Most of the households were not receiving timely maintenance for leaking taps and flush tanks.

Public water services were available for most households with no charges or existence of water meter. However some respondents had not been getting water through pipe lines for many years, although they regularly paid the water tax. So it can be concluded that to determine the value and price of water it is important to make the consumer responsible for better water management and that conservation is necessary.

Because of poor maintenance, the municipal water supply and related facilities have become grossly inadequate with regard to users' needs and expectations. Dwellers of the low-income group areas, who cannot afford to pay the cost of private tankers, have no choice but to consume sub-soil, unhygienic water.

However, a decline in the KWSB's institutional capacities to manage its aging operational systems, imbalance in the supply and demand, dilapidated water distribution networks, decaying pumping machines, increasing incidents of water theft and leakages in the supply lines, increasing dependence on water vendors and inappropriate as well as irresponsible tariff structures are, among others, pressing aspects which have to be dealt with immediately.

### 3.2.4 Household Water Use Behavior and Perception

#### Water Usage Behaviour

Respondents were asked about the household water behaviour i.e. water usage for household activities including personal hygiene/bathing, laundry, washing of car/motor cycle, use of flush tanks and water saving measures.

#### Findings and Analysis

In HH survey drinking, cooking, laundering, bathing, dish washing and toilet flushing were the main activities where water was being used.

**Table – 22**  
**Household Water Usage**

	<b>Number</b>	<b>%</b>
Drinking	1085	99
Cooking	1093	99
Laundering	1092	99
Bathing	1084	99
Dish washing	1064	97
Toilet flushing	902	82
Washing of porch	515	47
Plants/Lawn watering	21	2
Car / motorcycle washing	31	3
<b>Base</b>	<b>1100</b>	

\*multiple response

In HH survey a majority of the respondents (90 percent) reported that the household members use bucket/drum for personal hygiene. Some reported shower (7 percent) and bath tubs (4 percent).

**Table – 23  
Personal Hygiene**

	Number	%
Shower	81	7
Tub bathing	45	4
Bucket/drum	992	90
<b>Base</b>	<b>1100</b>	

\*multiple response

In HH survey about more than 70 percent of the respondents (in both the age groups) reported that they took bath twice a day in summers. While in winters it decreased, about half of the respondent (in both the age groups) took bath once a week, about a quarter also reported twice a week.

**Table – 24  
Frequency of Bathing by Season**

	Age (0-16 years)				Age (17 years and above)			
	Summer		Winter		Summer		Winter	
	Number	%	Number	%	Number	%	Number	%
Once a day	635	26	556	22	748	21	976	27
Twice a day	1582	64	55	2	2676	75	105	3
Three times a day	228	9	5	0	135	4	19	1
Once a week	5	0	1402	57	9	0	1663	47
Twice a week	17	1	385	16	11	0	805	22
Once more than a week	0	0	64	3	0	0	11	0
<b>Total</b>	<b>2467</b>	<b>100</b>	<b>2467</b>	<b>100</b>	<b>3579</b>	<b>100</b>	<b>3579</b>	<b>100</b>

In HH survey washing machine was used by 82 percent of the households for laundry. Some 18 percent were also doing laundry by hand. Seventy-two percent of respondents reported that they did laundry 'once a week' and 23 percent reported 'twice a week'.

However in FGDs more than half of the participants in the sample area reported that they usually use washing machine weekly to do laundry.

**Table – 25  
Household Laundry**

	Number	%
By hand	195	18
By machine	902	82
No response	3	0
<b>Total</b>	<b>1100</b>	<b>100</b>

Very few households denied that they did not waste water (leave tap/hose running) during household chores. However half of the households also admitted that they left taps running while brushing teeth, bathing and washing face/hands. More than a quarter believed that they did so during washing clothes in a tub and watering plants and lawns,

some less than a quarter also mentioned wastage of water during dish washing. Besides all those households that reported 'Yes', a majority of households (more than half) did not recall or evoked (don't know or don't remember) regarding their water usage habits.

A majority of the FGD participants accepted that they left the tap/hose open while brushing teeth, washing face and bathing. However majority also accepted that they left the tap/hose during washing utensils and clothes.

**Table – 26**  
**Leave the Tap/Hose Running**

	Brushing teeth		Washing face/hands		Bathing		Washing Utensils		Washing clothes in a tub		Watering lawns/plants	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	560	51	545	40	509	46	153	14	300	27	409	37
No	40	4	65	6	31	3	47	4	33	3	11	1
Don't know	500	45	490	44	560	51	900	82	767	70	680	62
<b>Total</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>	<b>1100</b>	<b>100</b>

In HH survey more than half (54 percent) of households were reported to wash their car/motor cycle weekly and 34 percent reported washing monthly, mostly by bucket (86 percent).

**Table – 27a**  
**Existence of Car or Motorcycle**

	Number	%
Yes	307	28
No	793	72
<b>Total</b>	<b>1100</b>	<b>100</b>

**Table – 27b**  
**Washing of Car or Motorcycle**

	Number	%
Bucket	264	86
Hose pipe	28	9
Wet cloth	12	4
No response	3	1
<b>Total</b>	<b>307</b>	<b>100</b>

A total of 69 percent households had no latrine cistern at all, they either used tap or bucket in the toilets. The remaining 31 percent had full flush system in place. Water was wasted in both flushing and through bucket, while where there was no re-cycling of water mentioned by the respondents in the toilets.

**Table – 28**  
**Latrine Cistern System**

	Number	%
Full flush system	342	31
Tap system	707	64
Bucket system	50	5
No response	1	0
<b>Total</b>	<b>1100</b>	<b>100</b>

In HH survey a large majority of the respondents reported positively in response to water saving measure practices. However the most common water saving measure was the use of bucket for most of the activities shown below, which was considered the most efficient method for saving water by the respondents. If we compare the data on water amenities/services in the households from the earlier section which shows that water amenities and services in the household was in very few places, we can easily say the practices of water saving measures were not efficient enough for water conservation.

**Table – 29a**  
**Water Saving Measures Practiced**

	<b>Number</b>	<b>%</b>
Yes	1023	93
No	77	7
<b>Total</b>	<b>1100</b>	<b>100</b>

Most of the FGD participants claimed to waste water in washing floors, stairs and verandas and leave the tap running while using bathrooms in daily use. Due to the acute dearth of water, most of the FGD participants (in 5 areas in Town) were trying to consciously save water. They were adapting the following water saving measures:

- Washing utensils – keep bucket under tap (recycle in the washrooms) and close the tap as soon as possible, rinse under slow tap or in a bucket.
- For cleaning floors –moping the floor, use less water
- Bathing –try to use less water
- Washing clothes – do not leave tap running, in two tubs and recycle that water in toilets, wash less frequently in more loads
- Watering plant-less water
- Wash car/motor cycle- use buckets



**Table – 29b  
Water Saving Measures**

	Number	%
<b>Washing Utensils</b>		
Bucket	989	90
Under slow tap	10	1
No response	24	2
None	77	7
<b>Watering Plants/Laws</b>		
Bucket / drum	35	3
Tap	1	0
None	1064	97
<b>Toilet flushing</b>		
Bucket	776	71
Less use of flush system	6	1
None	318	28
<b>Bathing</b>		
Bucket	956	87
Shower	31	3
Tub	3	0
None	112	10
<b>Cleaning floors</b>		
Bucket/tub	477	43
Mopping	487	44
Tap	1	0
None	139	13
<b>Washing car / motorcycle</b>		
Bucket	109	11
Take less time for cleaning	2	0
None	989	90
<b>Washing cloths</b>		
Bucket/tub	977	89
Tap	1	0
None	122	11

\*multiple responses

## **Conclusions**

The pre-intervention survey findings show that water was being wasted mainly in all household activities, the consumers were careless about wasted water in the bathroom, frequent bathing and washing porch in most of the households. However, using bucket was considered to be the most efficient water saving method by the households, which was more due to lack of water amenities and less for water conservation.

**There is a need to sensitize the women on sense of responsibility pertaining to water conservation and better management, through information dissemination.**

The reckless use of water proves a need to create awareness for promotion of efficient use and micro management of water. Water conservation at home is one of the easiest measures to put in place, and saving water should become part of everyday family practice.

Saving water at home does not require any significant cost outlay. Although there are water-saving appliances and water conservation systems, but starting with the little things, making small changes in daily routine can help to save a good amount of water a day. For example, 75% of water used indoors is in the bathroom, and 25% of this is for the toilet.

We have many ways to cut down on water use in our toilets ie half flush system (put plastic bottles or pebbles in toilet tank), take shorter showers and turn off the shower while soaping up. Using simple methods like low-flow showerheads and faucet that can also reduce our home water consumption.

### Knowledge and Perception Regarding Water Conservation and Management

Respondents were asked about the knowledge and perception regarding the severity of water shortage in the city, importance of water conservation and management, watching/reading of public information programme /literature/articles and environmental problems facing by Karachi.

### **Findings and Analysis**

In HH survey 89 percent respondents had knowledge that Karachi had water shortage problem. However 41 percent had no idea about the importance of water conservation and 59 percent agreed that water conservation in Karachi city was a very important issue.

Most of the FGD participants had knowledge that there is acute shortage of water in the city, while some replied negatively.

**Table – 30**  
**Knowledge about Shortage of Water in Karachi**

	<b>Number</b>	<b>%</b>
Yes	989	89
No	105	10
No response	6	1
<b>Total</b>	<b>1100</b>	<b>100</b>

**Table – 31**  
**Importance of Water Conservation in Karachi**

	<b>Number</b>	<b>%</b>
An important issue	643	59
Not a very important issue	2	0
No opinion	455	41
<b>Total</b>	<b>1100</b>	<b>100</b>

The main thoughts (in both HH survey and FGDs) behind the importance of water conservation in Karachi city were:

- So that the water we conserve can be made available to those who do not have water/ use less to provide others/ save for other areas
- Water is essential for life and human requirement so we should conserve water/ water is the basic necessity of life
- Water conservation will alleviate water shortage in summer months

- Water is a blessing and we should respect it
- Water conservation can help resolve water scarcity issues in the future/ save for future/ face all problem in future

**Table – 32  
Importance of Water Conservation**

	<b>Number</b>	<b>%</b>
So that the water we conserve can be made available to those who do not have water	166	26
Water is essential for life and human requirement so we should conserve water	64	10
Water conservation will alleviated water shortage in summer months	55	9
Water is a blessing and we should respect it	57	9
Water conservation can help resolve water scarcity issues in the future	51	8
People who waste water should be educated about water conservation	10	2
Water shortage can be overcome by observing water conservation	8	1
Because there is shortage of water in Karachi	8	1
So that water resource are available for future generations	7	1
If there is Water conservation more electricity will be generated people will be saved from load shedding	7	1
Water conservation is emphasized in our religion	5	1
People will not face problems during that period when water supply stopped	5	1
The water we conserve can be utilized for other purposes e.g wadu and bathing	4	1
If there is water we will remain healthy	2	0
Conservation is important because water resource is becoming scarce	2	0
We will have more water available for use	1	0
Water scarcity can not be controlled without water conservation	1	0
Don't know	5	1
No response	190	30
<b>Base</b>	<b>643</b>	

\*multiple response

### Information Sharing on Water Conservation and Management

Respondents were asked about the information sharing (watching/reading of public information programme /literature/articles) on issue of water conservation and environmental problems facing Karachi.

### **Findings and Analysis**

Only 9 percent HH respondents reported positively about the public information programme and literature/articles on water conservation and management. Only 5 percent respondents reported that someone had discussed about water conservation and management with them.

During FGDs in most of the areas a large majority of participants had never come across any TV programme/literature/IEC material regarding water conservation and management. Some of the participants reported that they had watched TV programmes on GEO or in news on water conservation.

According to (HH survey) respondents presently the most critical environmental problems faced by the residents of Karachi were as follows:

- Noise and smoke emitted from vehicles
- Garbage and improper disposal of garbage
- Air pollution
- Water shortage
- Stagnant dirty water
- Plastic bags
- Leakage and breakage of water pipe lines and sewerage
- Noise and contaminated water
- Lack of greenery
- Traffic congestion
- Mixing of sewerage water with clean water
- Illness cause by spitting every where

While in FGDs the most critical environmental problems facing the residents of Karachi were as follows:

- Sewerage
- Solid waste/garbage
- Un-save drinking water (mixing with sewerage)
- Air pollution
- Shortage of water

## **Conclusions**

Majority of respondents knew that Karachi had shortage of water, while more than half agreed that water conservation in Karachi was a very important issue especially to resolve water scarcity in summers. However the shortage of water, leakage of pipelines and contamination of water were perceived to be the most critical problems faced by the residents of Karachi.

No discussion/public meeting and no information shared through media and IEC material on water conservation was reported by the respondents at all.

There is clear lack of information sharing and general awareness on water conservation and better management required at household level. There is strong need to inculcate the concept of home based water conservation and micro management of water and promotes sustainable water resources to meet the substance needs of urban families in Karachi.

## SECTION FOUR

# Knowledge, Attitude and Perception

This section covers knowledge, attitude and perception of water conservation and management of the members of Saddar Town Area Water Partnership (AWP) Steering Committee.

### 4.1 Socio-Economic Profile

The section presents the socio-economic profile; which includes housing structure, annual family income and expenditures for various utility services.

#### Findings and Analysis

Half of the Steering Committee members were living in multi-storied housing system (less than 6), while less than half were living in double storied housing with 6.6 family size. Sixty percent had 2-3 room houses and 20 percent have 4 room houses. Half of the houses were on rent.

Forty percent were earning between Rs 10,000 – 40,000, while 60 percent fell in more than Rs 40,000 category.

Most of the members were reportedly paying Rs 1,500 for gas, cable TV, water and building maintenance. 70-80 percent members were paying less than Rs 5,001 for telephone and electricity. While 50 percent paid with Rs 500, 20 percent were paying between Rs 1,000 - 1,200 and 10 percent reported to pay as high as Rs 10,000.

Comparing the water charges with other utility payments, 40 percent conceived that the water prices were 'too high', while another 40 percent perceived it as 'normal'.

#### Conclusions

An ample amount of income is being spent for basic utilities and charge of water is considered 'too high' comparing with other utility payments.

### 4.2 Sources of Water Supply and Sanitation Facilities

Facilities and services of water utilization were explored in the sub-section.

#### 4.2.1 Household Water Supply and Sanitation System

Steering Committee members were asked about the household water supply system i.e.; source of household water, supply of water/regularity, amount of water they are getting, fulfillment of water need for households, priority of water use, shortage, rating of existing water system, major appliance use in the households and sanitation system.

## **Findings and Analysis**

Sources of household water supply varied from tap inside house, tap outside house, boring/well and tanker. A large majority of the members reported that they received water regularly. Half of the members reported that they were paying Rs 500-1000, while 20 percent were paying Rs 2000-4000. A quarter of the members mentioned that their neighbours shared their water source for cooking and drinking. Only one member said that water was not enough for laundry.

Drinking and cooking were the first two priorities for the use of water, while cleaning and sanitation were the third and fourth priority for the members. All the members agreed that there was a great shortage of water in summers. Half of the members rated the existing water supply services as 'fair', 40 percent rated as 'good' and 10 percent said 'poor' services.

All members reported that the waste water goes into the central sewerage system.

## **Conclusions**

Varied sources of water supply were found with high payments as Rs 2000-4000. All agreed that there is great shortage of water in summers, which they had been facing for a long time in this city. Evaluating the existing water supply system either as 'fair' or 'poor' shows that the experience with the system was not too good.

### **4.2.2 Drinking Water**

Members were asked about the source of drinking water, amount of water they were getting, payment for drinking water, purification of water and rating of current public water services.

## **Findings and Analysis**

Forty percent of the members were using bottled water for drinking and 60 percent reported piped water as the major source for drinking water. Half of the members out of those who were using bottled water, were paying Rs 500-1500 for drinking water, while a quarter were getting filter water from neighbours.

Those who used piped water were usually purifying the drinking water by boiling. In terms of purity and pressure they rated the current public water services 'poor', while they felt that taste and colour of the water as 'good'.

## **Conclusions**

People have no choice left but to buy bottled water for drinking purpose, and that adds to the burden of payment in household expenditures. Otherwise the use of unsafe tap water is also another option for those who cannot afford it.

### **4.3 Water Amenities and Service**

They were asked to mention the amenities and services in their households and their improvement/maintenance.

#### **Findings and Analysis**

All the members had single kitchen in their houses while 40 percent of the households had 1-2 wash rooms and another 40 percent had 3 wash rooms in their houses.

Majority of the houses had 5 and more taps in their houses, while none of the taps and toilet cisterns leaked in their houses. While 40 percent members reported that taps usually had brown water running out in the houses.

Seventy percent of the members reported that they did receive prompt maintenance whenever it was needed. No member's house/apartment had water meter.

#### **Conclusions**

Existence of water meter can make people responsible to conserve and manage water resource in the city like Karachi where shortage of water is the main problem.

### **4.4 Household Water Use Behavior and Perception**

#### **4.4.1 Water Usage Behaviour**

Members were asked about the household water behaviour i.e. water usage for household activities including personal hygiene/bathing, laundry, washing of car/motor cycle, use flush tanks and water saving measures.

#### **Findings and Analysis**

Laundering, drinking, cooking, bathing, washing of porch, toilet flushing and car washing were the main activities where households of the Steering Committee members used water for. Half of the members mentioned the use of shower and remaining half mentioned bucket for personal hygiene.

Eighty percent were doing laundry by machine, while 30 percent reported doing laundry by hand. Majority (80 percent) were doing laundry once a week, 40 percent were doing laundry in one load, while half said two or three loads.

40 to 50 percent of the members accepted that they left the tap/hose running while brushing teeth, washing face/hands, bathing, washing pots, washing cloths and watering plants.

Eighty percent of the members had car or motor cycle. About 40 percent reported that they washed car/motor cycle weekly, while 10 percent reported daily washing by bucket and hose pipe. Some members also reported use of service stations and by a wet cloth.

Majority (80 percent) of the members reported that their latrine cisterns had full flush system.

Seventy percent of the members said that they were practicing water saving measures in their households. Other water saving measures were:

- Watering plants on alternative day
- Watch timing while watering plants
- Use half flush
- Use shower instead of tub
- Use less water
- Use bucket and mop for cleaning floor and car
- Do not wash car
- Laundry less frequently
- Use of washing machine

### **Conclusions**

Better water conservation measures should be introduced in the Town to avoid negligence in water usage e.g. leaving tap/hose running while doing household activities, use of full flush system, frequent laundry and long bathing etc.

#### **4.4.2 Knowledge and Perception Regarding Water Conservation and Management**

Members were asked about their knowledge and perception regarding the severity of water shortage in the city, importance of water conservation and management, watching/reading of public information programme /literature/articles and environmental problems facing by Karachi.

### **Findings and Analysis**

Seventy percent of the members knew that Karachi had the shortage of water and 80 percent agreed that water conservation in Karachi was a very important issue.

The main reasons for considering that water conservation in Karachi city was an important issue were:

- Water conservation can help resolve water scarcity issue in future
- So that the water we conserve can be available to those area where do not have water
- Water meter is necessary because people will use less water when start paying
- Washing should be done in a bucket instead of hose/tap
- Do not leave the tap open

Thirty to forty percent of the members reported that they had not watched public information programme and read any literature/articles on water conservation and management.

Sixty percent members reported that nobody had any discussion with them on water conservation.



According to the respondents the most critical environmental problems faced by the residents of Karachi were:

- Garbage heaps and its proper disposal
- Air pollution
- Noise pollution
- Water conservation
- Dirty water

### **Conclusions**

Sense of responsibility towards the water conservation and management through the print and electronic media and other IEC materials will help people to contribute with the authority.

# Annexes

## Annex – 1      Survey Tools Family Profile

Questionnaire No. \_\_\_\_\_ Date: \_\_\_\_\_

Town: \_\_\_\_\_ UC: \_\_\_\_\_ Name of Interviewer: \_\_\_\_\_

S #	Relation	Age	Sex		Marital Status (code)	Education (code)	Employment/ Profession (code)	Total Monthly Income (PKR)
			M	F				
1.								
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								

- |                                                                                                                                                                               |                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>Marital Status</b></p> <ol style="list-style-type: none"> <li>1. Married</li> <li>2. Un married</li> <li>3. Separation</li> <li>4. Divorce</li> <li>5. Widow</li> </ol> | <p><b>Education</b></p> <ol style="list-style-type: none"> <li>1. Primary</li> <li>2. Middle</li> <li>3. Secondary</li> <li>4. Inter</li> <li>5. B.A/B.Sc</li> <li>6. M.A/MSc</li> <li>7. Non formal</li> <li>8. None</li> </ol> | <p><b>Employment/Profession</b></p> <ol style="list-style-type: none"> <li>1. Government service</li> <li>2. Private Service</li> <li>3. Business</li> <li>4. Wage labor</li> <li>5. Domestic servant</li> <li>6. Skills/crafts</li> <li>7. Housewife</li> <li>8. None</li> </ol> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## **Building Mutual Accountability in Urban Water Sector Urban Household Water Use Questionnaire**

Assalam-o-Alaekum. My name is \_\_\_\_\_. I am conducting a survey concerning urban residential water use issues in your neighborhood for a ANSA program on *Building Mutual Accountability in Urban Water Sector in Saddar Town, Karachi*. The information gathered will be used to identify water use patterns, and problems in order to suggest ways that municipal water supply and service could be improved in future. While the general conclusions of the study may be used to help formulate government policy recommendations, all the specific information you provide will be treated confidentially. We hope that you will be willing to help us with this study.

### **Notes to Enumerators:**

- 1. Please fill out the location information by yourself and answer the following questions according to interviewee. Responses to all questions should be noted. Write R if the respondent either refuses to answer or simply does not respond to a particular question.**
- 2. Ask to speak to the head of the household or his or her spouse. If neither the head nor his or her spouse is present, please arrange for an alternative visit.**

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Name of Enumerator: \_\_\_\_\_ Saddar Town: UC: \_\_\_\_\_  
Date of Survey: \_\_\_\_\_ Residential Area: \_\_\_\_\_  
Household Address: \_\_\_\_\_  
Building \_\_\_\_\_ Unit \_\_\_\_\_ Room \_\_\_\_\_

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### **Part One : Household Socioeconomic Data**

- 1. Do you live in a**  
[1] High rise (higher than 6) [2] Multi-story housing (less than 6)  
[3] Double story housing [4] Single unit housing  
[9] Other: Specify \_\_\_\_\_
- 2. Do you own or rent the dwelling in which you live?**
- 3. How many people live in your house? \_\_\_\_\_**
- 4. What is the annual family income?**  
[1] Less than 10,000 PKR [2] 10,000 to 20,000 PKR [3] 21,000 to 30,000 PKR  
[4] 31,000 to 40,000 PKR [5] More than 40,000 PKR [9] Do not know

**5. What is the monthly expense for various utility services?**

Items	Water	Electricity	Telephone	Gas	Cable TV	House maintenance
Payment (PKR)						

**6. Compare with other utility payments such as the electricity fee, what do you think about the current water tariff?**

[1] Too high [2] Normal [3] Too low [9] Do not know

**Part Two: Water Amenities And Service Data**

**Water supply & Sanitation**

**7. What is the major source of household water supply?**

[1] Tap inside house [2] Tap outside house/community [3] Boring/well  
 [4] Tankers. [9] Other Specify \_\_\_\_\_

**8. Do you received water regularly**

Yes[1] No [2]

If yes,

Daily [ ] No. of hours:-----  
 After two days [ ] No. of hours:-----  
 After three days [ ] No. of hours:-----  
 Once a week [ ] No. of hours:-----  
 Other specify \_\_\_\_\_ No. of hours:-----

**9. Do your neighbors use your water source?**

Yes[1] No [2]

If yes, how much

Per day:----- Per week:-----

For what purpose:\_\_\_\_\_

**10. Do you covers all your household needs in the amount of water you get?**

Yes[1] No [2]

If no, what is not covered:-----

**11. What are your priorities for the use of water?**

Drinking [ ] Cooking [ ] Cleaning [ ] Sanitation [ ]  
 (Rank in order of priority)

12. **Is there a greater shortage of water in summer or winter?**  
 Summer [1] Winter [2]
13. **How would you rate the existing water supply service?**  
 [1] Very Good [2] Good [3] Fair [4] Poor [9] Do not know
14. **Where does your waste water go?**  
 [1] Central sewerage system [2] Roadside drain [3] Nearby water body  
 [4] Do not know [9] Other: Specify \_\_\_\_\_

**Drinking Water**

15. **What is the major source of drinking water?**  
 [1] Piped water [2] Well water [3] Bottle water [9] Other: Specify \_\_\_\_\_
16. **If your family does not use tap water for drinking, how much do you pay for drinking water each month?** \_\_\_\_\_ PKR/Month
17. **Do you purify water before drinking**  
 [1] Yes [2] No  
 If yes,  
 1. Boiling 2. Alum 3. Tablets 4. Through Sun Other  
 Explain: \_\_\_\_\_
18. **How would you rate the current public water service in this town?**

	[1] Excellent	[2] Very good	[3] Good	[4] Poor	[5] Very bad
Purity					
Color					
Taste					
Pressure					

**Amenities and Service**

19. **How many washroom and kitchen in your apartment/house?**  
 Washroom: \_\_\_\_\_ Kitchen: \_\_\_\_\_
20. **Does your toilet cistern leak?**  
 [1] Yes [2] No [3] Not applicable [9] Do not know
21. **Do your taps leak?**  
 [1] Yes [2] No [9] Do not know
22. **Do your taps usually have brown water running out?**  
 [1] Yes [2] No [9] Do not know

23. **Do you receive prompt maintenance whenever it is needed?**  
 [1] Yes [2] No [3] Not applicable [9] Other: Specify\_\_\_\_\_
24. **Does your apartment/house have a water meter?**  
 [1] Yes [2] No
25. **How often is the water meter read?**  
 [1] Once a month [2] Twice a month [9] Others. Specify \_\_\_\_\_
26. **Do you know how much you pay for each cubic meter of water?**  
 [1] Yes [2] No [9] Other: Specify\_\_\_\_\_
27. **What do you think about the current water rate?**  
 [1] Too high [2] Normal [3] Too low [9] Do not know
28. **Which of the following aspects of your water supply need improvement ?**  
 [1] Quality [2] Pressure [3] Rate [4] Reliability [5] Billing system  
 [6] Service quality [7] Maintenance [9] Other: Specify\_\_\_\_\_
29. **Which one of the above aspects do you think should be improved right away?** \_\_\_\_\_

**Part Three: Household Water Use Behavior And Perception Data**

30. **Does your household use water for?**  
 [1] Drinking [2] Cooking [3] Laundering [4] Bathing [5] Toilet flushing  
 [6] Plants/Lawn watering [7] Car washing [8] Washing of porch [9] Other:  
 Specify\_\_\_\_\_
31. **For personal hygiene, which of the followings do household members use most frequently?**  
 [1] Shower [2] Tub bathing [3] Bucket/drum [9] Other: Specify\_\_\_\_\_
32. **For the shower or bath, what is the following information about each member?**

Summer			Winter		
Member	Age	Frequency	Member	Age	Frequency

**Frequency Code:** [1] Once a day [2] Twice a day [3] Three times a day  
 [4] Once a week [5] Twice a week [6] Once more than a week  
 [9] Others

- 33. Do you do laundry by hand or by machine?**  
 [1] By hand [2] By machine [9] Other: Specify\_\_\_\_\_
- 34. What is the frequency of doing household laundry?**  
 [1] Everyday [2] Once three days [3] Once a week [9] Others:  
 Specify\_\_\_\_\_
- 35. Do you leave the tap/hose running while?**
- |                              |         |        |
|------------------------------|---------|--------|
| [1] Brushing teeth           | Yes [ ] | No [ ] |
| [2] Washing face / hands     | Yes [ ] | No [ ] |
| [3] Bathing                  | Yes [ ] | No [ ] |
| [4] Washing Utensils         | Yes [ ] | No [ ] |
| [5] Washing clothes in a tub | Yes [ ] | No [ ] |
| [6] Watering lawns/plants    | Yes [ ] | No [ ] |
| [9] Other: Specify_____      | Yes [ ] | No [ ] |
- 36. Do you have a car?** [1] Yes [2] No
- If yes, do you wash your car?
- [1] Daily [2] Alternative day [3] Weekly [4] Monthly  
 [9] Other: Specify\_\_\_\_\_
- 37. Do you wash your car with?**  
 [1] Bucket [2] Hose [9] Other: Specify\_\_\_\_\_
- 38. Do your latrine cisterns have?**  
 [1] Full flush system [2] Half flush system [9] Other: Specify\_\_\_\_\_
- 39. Are there any water-saving measures practiced in the household?**  
 [1] Yes [2] No [9] Other: Specify\_\_\_\_\_
- 40. What water saving measures do you use for the following, Explain ?**
- [1] Washing utensils [ ] \_\_\_\_\_  
 [2] Watering plants/lawns [ ] \_\_\_\_\_  
 [3] Toilet flushing [ ] \_\_\_\_\_  
 [4] Bathing [ ] \_\_\_\_\_  
 [5] For cleaning floors [ ] \_\_\_\_\_  
 [6] Washing cars [ ] \_\_\_\_\_  
 [7] Washing clothes [ ] \_\_\_\_\_  
 [9] Other: Specify\_\_\_\_\_
- 41. Do you know that Karachi has shortage of water?**  
 [1] Yes [2] No [9] Other: Specify\_\_\_\_\_

**42. Do you believe that water conservation in the Karachi area is A very important issue?**

An important issue \_\_\_\_\_  
Not a very important issue \_\_\_\_\_  
Not important at all \_\_\_\_\_  
No opinion \_\_\_\_\_

(If they think water conservation is important) Why do you think it would be a good idea to conserve water? (if the interview subject provides more than one reason ask them to rank their reasons)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**43. Have you ever watched any public information program on water conservation and management?**

[1] Yes [2] No [9] Other: Specify\_\_\_\_\_

**44. Have you ever read any literature/articles on water conservation and management ?**

[1] Yes [2] No [9] Other: Specify\_\_\_\_\_

**45. Has anyone discussed the importance and need of water conservation and management with you?**

[1] Yes [2] No [9] Other: Specify\_\_\_\_\_

**46. What do you think is the most critical environmental problem facing Karachi residents today?** \_\_\_\_\_