ANSA
SOUTH ASIA REGION

Hisaar Foundation
a foundation for water, food and livelihood security

PROJECT

BUILDING MUTUAL ACCOUNTABILITY IN URBAN WATER SECTOR

SCHOOL WATER CONSERVATION AND BETTER MANAGEMENT

ACTIVATION PROGRAMME

Post-Intervention Schools Survey Report of Saddar Town

OCTOBER 2012

Table of Contents

SECTION ONE

Introduction

1.1 Introduction to ANSA

The project “Building Mutual Accountability in Urban Water Sector” funded by The World Bank Institute and the Affiliated Networks for Social Accountability (ANSA) is an initiative to promote, strengthen and sustain social accountability knowledge and praxis globally. Social Accountability refers to the ways and means through which citizens can hold public institutions accountable in terms of delivering public services, improving people's welfare and protecting people's rights and entitlements. The primary objective of ANSA-SAR & the Global Partnership Fund is to enhance and scale up social accountability and governance initiatives in the South Asia Region and elsewhere, through the provision of project grants to civil society organizations, giving academic fellowships to young scholars and building capacities and competencies within both state and civil society institutions. ANSA South Asia Region (ANSA-SAR) & Global are currently coordinated from the Institute of Governance Studies, BRAC University, Dhaka. The institute also houses the Journalism and Research Initiative (JATRI).

1.2 Study Background

The Building Mutual Accountability in Urban Water Sector project is initiated by the Hisaar Foundation with the financial assistance of Affiliated Networks for Social Accountability South Asia Region (ANSA-SAR).

The Hisaar Foundation, is a foundation for water, food & livelihood security and is a registered non-profit organization. It has been working on water related issues since its inception in 2003 and is actively engaged in promoting and advocating the need of water conservation and better management across Karachi, a major metropolis.

This was originally an 15 months project (from January 2010 to June 2012) with an extension of 6 months and was implemented in the 11 UCs of Saddar town in Karachi, Pakistan.

As part of ANSA project on “Building Mutual Accountability in Urban Water Sector”, in phase I it has established a partnership with the TMA Saddar Town, to promote water conservation among the community of this Town. It has also brought in all the stakeholders together to bring about a realization among the residents that they must play their role in changing the way they use their water which is rapidly becoming a scarce resource.

To this end, 20 public schools of the Saddar Town were identified, selected and targeted by the WWN for the school activation programme and children were educated on the importance of water conservation and better management of the resource through presentations, water saving guidelines, exciting activities, games and prizes. Additionally, teachers were provided training on the importance of water conservation and improved water management practices.

Consequently, the Hisaar Foundation has conducted a pre and post school survey amongst the public school children under the **School Water Conservation and Better Management Activation Programme**, to make them realize the importance of saving water and most importantly examine and as a result change their water usage habits for sustainability of the water resource.

1.3 Study Design and Methodology

The post survey of schools in Saddar Town was carried out in order to get a picture of the situation before and after the ANSA activation program was implemented so as to be able to counter the specific problems and issues affecting the schools.

The study used a mix of qualitative and quantitative survey methods.

All the questionnaires involved a combination of quantitative and qualitative questions designed to conduct a comprehensive analysis, with one survey created especially for the students and the other for the teachers and heads of schools. Both the questionnaires covered three areas: drinking water, sanitation/waste management and water conservation and management practices.

1.3.1 Research Tools

The following research tools were used for the school surveys:

- Tool-1 : School Audit Form
- Tool-2: School Observation Sheet
- Tool-3: Questionnaire for Teachers/Head
- Tool-4: Questionnaire for Students

Annex – 1 Survey Tools

At the time of pre-survey, the questionnaire 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. The same questionnaire was used to review during the post-survey.

1.3.2 Sample Coverage

The post-intervention school survey was conducted in all 11 UCs of Saddar Town. A total of 20 schools were selected. The school survey covered 20 students and 5 teachers including school head/in-charge from each school, covering a total sample size of 400 students and 92 teachers/heads that were interviewed.

The 20 public sector schools were selected from different educational levels i.e. primary, secondary, lower secondary and higher secondary and to give a gender desegregated data, out of 20 schools; 10 girls and 10 boys schools were selected across the 11 UCs of Saddar Town. In addition to the school observation sheet, a school audit form was also filled from each school.

The list of schools is as follows:

Location	Name of School (BOYS)	Name of School (GIRLS)
UC-1	Govt. Boys Secondary School, C.M.A	Govt. Girls Secondary School, C.M.A
UC-2		Govt. Girls Secondary School, Burhania
UC-2	Govt. Boys primary School, SMB Fatima	
UC-3		Govt. Girls Secondary School, City
UC-4		Govt. Girls Lower Secondary School, City Railway
UC-5	Govt. Boys Secondary School, NJV	Govt. Girls Secondary School, NJV
UC-5	Govt. Boys Secondary School, Kotwal building # 1	
UC-5	Govt. Boys Primary School, Taleem Gah Niswan	
UC-6		Govt. Girls Secondary School, HMH Gazdar
UC-7	Govt. boys Secondary School, P&T	
UC-8	Govt. Boys Primary School, Fazlur Rehman	Govt. Girls Secondary School, Fazlur Rehman
UC-9	Govt. Boys Primary School, Bismillah Haijrat Colony	
UC-9	Govt. Boys Lower Secondary School, President House	Govt. Girls Secondary School, President House
UC-10		Govt. Girls Secondary School, Junior Model # 1
UC-11	Govt. Boys Lower Secondary School, Gizri	Govt. Girls Secondary School, Gizri

1.4 Data Entry, Processing and Tabulation

The quantitative 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 whole process was managed by the team leader assisted by a data operating specialist. Data entry was carried out by a team of experienced data entry operators, followed by detailed tabulation of data sets.

1.5 Report Organization

The output of the survey report is as follows:

Section One Introduction
Section Two Schools Profile
Section Three Teachers/Heads Data
Section Four Students Data
Section Five Conclusions

1.6 Study Constraints

There were two main constraints faced by the team during the survey; first was taking permission from the education department and second was the pre-schedule activity of schools (teacher's trainings and tests, mid-term exams and vacations) and schools' timings.

Apart from the above mentioned problems there were some other setbacks i.e. action by armed groups and rains also happened during this period.

SECTION TWO

Schools Profile

Apart from interviewing students and teachers from each of the schools, the research team also designed a school audit form and an observation sheet for themselves, focusing on basic information about the school i.e. enrollment, teaching and non teaching staff, school background, information about areas of water, sanitation and solid waste management (see Annex-1).

2.1 Schools Background

A school audit form was filled from each of the schools to collect the basic information about the school i.e. school address, contact number, number of enrollment, number of teaching and non teaching staff, school background, information about drinking and sanitation facilities, and source of water supply.

2.1.1 Enrollment of Children

A total of 4,498 students were found enrolled in 20 sample schools, while the division of students by gender was almost half among both the sexes (51 percent boys and 49 percent girls). However the average number of children enrollment in each school was 224.9.

2.1.2 Staff

A total of 275 teachers (including heads) were found on job in 20 sample schools. Half of the schools were found with less than 10 teachers on job, while 5 schools had 10-20 teachers and another 5 schools had 20-32 teachers. The least number of teachers appointed in any school was 2 teachers in Government Boys' Lower Secondary School, President House, while the highest number of teachers was 32 teachers in Government Boys' Secondary School, Kotwal Building No-1.

A large majority of schools either did not have enough number of sanitation workers appointed (12 schools) or they did not have any sweepers (4 schools) for the school. It was found that Head Mistresses from 4-5 schools had decided to take action on their own to clean the school. A sweeper was hired weekly/daily, and paid from the government maintenance account (SMC funds). While sometimes students and teachers themselves had taken the responsibility of cleaning.

2.1.3 School Structure - Building and Playground

Among all 20 schools, 6 schools had a very poor building structure, which was established as early as 50 – 70 years before. While another 5 schools were under repair or construction work had been recently completed. Majority of these schools either had no playground or had a very small ground but was not in use (garbage dumped).

Some of the existing school buildings were weakened and had flimsy walls/roofs due to seepage, and posed a serious risk of collapsing (especially in City Government Girls Secondary School and Government Girls Secondary School HMH Gazdar).

During the school survey, the school heads (HMs) ere complained that every year the heavy monsoon rains battered the schools. Even though the rains had stopped, but the small grounds of the school were flooded and drainage water had been mixed with 'rain water'. This was because the rain water had collected in the school grounds due to an inadequate drainage system. This had not permitted the students and the staff to reach the school building. This dirty water was stagnant at least a week, causing a miserable situation and an unhygienic environment in the schools.

2.1.4 Security System

Most of the schools had no security system. Although, they were under constant threat from drug addicts, delinquents, thieves and other undesirables; they had to safeguard the school property on their own. Most of the schools complained that their electrical accessories (bulbs/tube lights, fans etc), lab equipments and even the small items like taps etc were being carried away by thieves.

2.2 Water, Sanitation and Drainage Facilities

Apart from interviewing students and teachers from each of the schools, the research team also designed an observation sheet for themselves, focusing on areas of water, sanitation and solid waste management (see Annex-1). The observations made are recorded below.

2.2.1 Drinking Water Facilities

- Out of the total 20 schools, 9 schools had no drinking water facility in the school.
- Although there appeared to be a drinking water facility located within the school compound (11 schools) in the form of a large stone structure with multiple taps (4 schools) and water coolers (7 schools), half of them were non-functional.
- Piped water and boring appeared to be the main sources of water supply, with no filter system for most of the drinking water facility.
- It was also noted that the taps were either broken or missing entirely from the stone structures (water tanks). While the stone structures in some schools was not covered at all and vermin and green mould was very obvious in the water. Electric water coolers were not working and rusted in most of the schools.
- Other sources of obtaining drinking water (in the absence of drinking water facility inside the school) were a direct tap, drinking from toilet tap, small coolers/bottles filled from outside school, bringing water from home, fetching water by vendor and using the drinking water facility of nearby/neighbouring school.
- During the school visits, the research team also observed that none of the students were using the existing drinking water facility in 6 schools. While in remaining 5 schools some students were seen to drink water.
- The team also noted that while some schools had underground water tanks in place, they were filled with garbage and even maggot/filth – anything but water.

2.2.2 Sanitation Facilities

- The research team noted that with regards to toilet facilities, all the schools had multiple toilets; that is in theory. This system is further explored below.
- There appeared to be two types of toilet structures, more than half of the schools had old structures while less than half of the schools had new structures.
- These so called 'new toilets structures' existed in less than half of the schools but these new toilets were either incomplete/under construction or not functional due to the absence of basic amenities. However the 'old toilets structures' consisted of little more than small rooms made of bricks with doors. Often these doors were broken, in bad condition, or missing altogether.
- Observation also revealed that within the toilet itself, there were no fixtures, in the form of taps, basins, or flush facilities. There was also absence of any sort of lighting facility and door locks. There also appeared to be no connection of a water supply and no drainage system (new toilet structure).
- The team observed that the interiors of the toilets were filthy, with defecation littering the floor. The same was also noted for the area surrounding the toilets.
- Apart from being structurally incomplete, having no apparent drainage system or any sort of fixtures, the toilets also oozed a powerful smell that was unpleasant and made it very difficult to use the facility in any capacity. Lack of sanitation workers was one of the reasons of this filthy condition of the toilets.
- A respondent from the girls' school noted that the reason for such unsanitary conditions was in part due to the second shift school for boys who used the schools facilities, and had complete disregard for any idea of cleanliness and often destroyed the toilets fixtures.
- The plight of these incomplete toilets came to the notice of the research team when some school heads spoke out. Further investigation into the matter revealed that the responsibility for the matter fell on the educational departments shoulders, specifically the 'Work's Department'. However, they have shown to be apathetic in the past, implementing impotent solutions, often mismanaged and ill conceived; only compounding the problems the schools face.

2.2.3 Drainage System and Solid Waste Management

- The research team also observed that due to the old drainage lines there appeared to be a frequent blockage (especially during rainy season) and absence of drainage system in some schools where toilets construction was incomplete.
- Although connection with a main lane drain was available in a majority of schools but open drainage channels (near drinking water facility) with lots of microorganisms were obvious inside the schools.
- The observation sheets recorded an absence of any sort of method for the safe disposal of solid waste management.
- There was a complete absence of waste paper baskets in classrooms (more than half of the schools) and in the school compound (all schools). As a result, wrappers, papers, and other forms of waste were observed to be littered all over the school compound. This was true for both the boys and girls schools.
- In less than half of the schools dustbins were located inside the classrooms. These so called 'dustbins' were just dirty tin boxes/buckets, these 'dustbins' were also a source of germs for students.

- The survey team noted that there appeared to be no method for the collection or disposal of the garbage that was found due to the lack of sanitation worker/sweeper.
- A respondent from some schools (where there was no sweeper) revealed that the school hired sweeper from outside for cleaning to keep the classrooms and compound clean; however, in some schools peon or students themselves do cleaning, despite of all these alternatives, the classrooms remained filthy, and the compound left unclean.
- In some schools respondents argued that the school turned a blind eye to the lax attitude of the individual employed for the service, and did not take extra measures to provide an alternative.

SECTION THREE

Teachers/Heads Data

As part of the school survey the teachers and heads of the schools were also interviewed using a questionnaire designed for this purpose. The study team's findings upon interviewing with the teachers and heads are documented below.

3.1 Profile of School Heads/Teachers

Both the school heads and teachers were asked about their names, designations and number of years in the service.

A total of 20 school heads/in-charge and 72 teachers were interviewed during the survey, the responses revealed the following:

More than half of the heads (HMs/in-charge) and half of the teachers that were interviewed had been working in the schools for more than 10 years while the remaining had been working for the past 1-10 years. One third of the heads and teachers complained that there had been no water ever since, and that the teachers and students have had to come up with their own solutions to counter the existing problems.

3.2 Drinking Water Facilities

Both teachers and heads were asked about the following: existing drinking water facility, type of facility, regular supply water, safe drinking water, was the existing facility part of school plan, functionality of facility, utilization of facility by the students, teachers and the non-teaching staff, source of water supply and suggestion to improve the existing facility.

3.2.1 Drinking Water Infrastructure and its Utilization

At the time of survey there was no drinking water facility in less than half of the schools; even though the infrastructure in the form of water tanks and water coolers exists, these are nonfunctional in reality. Other half of the schools had regular water supply from water connection or boring, but there was no water facility.

Table – 1
Existence of Drinking Water Facility

Years	Heads		Teachers	
	N	%	N	%
Yes	15	75	41	57
No	5	25	27	38
No response	0	0	4	5
Total	**20**	**100**	**72**	**100**

Table – 2
Type of Existing Drinking Water Facility

	Heads		Teachers	
	N	**%**	**N**	**%**
Tap water	6	40	16	39
Water tank	3	20	5	12
Mineral water	3	20	6	15
Water cooler	1	7	**11**	**27**
Filter water	0	0	**1**	**3**
Boring water	1	7	**1**	**2**
No response	1	6	**1**	**2**
Total	**15**	**100**	**41**	**100**

Same source of water was used for both purposes (drinking and sanitation) in 75 percent of the schools, in schools where the source of water was different; it was found that in most cases, the boring water was used for toilets and piped water (KWSB) for drinking.

Table – 3
Source of Drinking Water and Water for Toilets

	Heads		Teachers	
	N	**%**	**N**	**%**
Same	15	75	54	75
Different	4	20	7	10
Don't know	0	0	4	5
No response	1	5	7	10
Total	**20**	**100**	**72**	**100**

When these heads and teachers were inquired about safe drinking water, more than half of them responded 'negatively'. They felt that the water was not safe for drinking due to the following reasons:

- Extremely salty/bitter
- Poor quality
- Mixed with drainage water
- Dirty/worms in water
- No filtration facility
- No cleaning of water tank
- Facility is beside the toilets
- Smelly water

Table – 4
Reasons for not Considering the Available Drinking Water Safe for Drinking

	Heads		Teachers	
	N	**%**	**N**	**%**
Salty water	2	40	5	19
Poor quality water	2	40	5	19
Drink water mixed with drainage pipes	0	0	1	4
Dirty water	1	20	5	19
Not filtered	0	0	2	8
Water tank not properly cleaned	0	0	3	11
Drinking water system nearby toilets	0	0	1	4
Smelly water	0	0	1	4
Don't know	0	0	1	4
No response	0	0	2	8
Total	**5**	**100**	**26**	**100**

*multiple response

Most of the students, but none of the teaching staff and teachers did not utilize the water facility in the school. About a quarter of teachers/heads reported that all students (28 percent) and teachers (25 percent) used the school water facility. While about 41 percent reported that all other staff also used the water facility. Half of the teachers and heads said that they themselves did not use the school drinking water facility at all.

About half of the heads and teachers gave the following reasons for non-functioning of drinking water facility:

- Broken/missing taps
- Out of order water cooler/not cooling
- Shortage of water
- Dirty water
- Water tank not properly clean
- Water tank is not covered up

Table – 5
Available Water Facility Functioning

	Heads		Teachers	
	N	**%**	**N**	**%**
Yes	8	40	31	43
No	10	50	32	44
Don't know	0	0	1	2
No response	2	10	8	11
Total	**20**	**100**	**72**	**100**

Table – 6
Reasons for Non-functioning of Drinking Water Facility

	Heads		Teachers	
	N	**%**	**N**	**%**
Damage taps	4	44	14	54
Faulty water cooler	1	11	2	8
Shortage of drinking water	1	11	2	8
Dirty water	0	0	3	12
Water tank not properly cleaned	0	0	1	4
Shortage of taps	1	11	3	12
No response	2	23	1	4
Base	**9**	**100**	**26**	

*multiple response

3.2.2 Improvement Needed in the Exist Facilities

More than half of the heads and teachers demanded for the supply of safe drinking water in the form of provision of water filters/repairing of filters, regular cleaning of water filter, provision of sweet drinking water and provision of clean drinking water.

About a quarter of them also mentioned that they needed electric water cooler.

Remaining quarter claimed there was a need to improve the existing infrastructure (stone water tanks) by cleaning, and repairing (taps, tank cover, painting etc). While some said that they needed bigger water tanks, separate facility of each school and keep the water cooler in a protected grill.

3.3 Sanitation Facilities

Both teachers and heads were asked about the available toilet facility, in terms of was the existing facility part of school plan? functionality of facility and alternatives of toilets if facility not available.

3.3.1 Available Toilets Facilities in the School

At the time of survey in more than half of the schools the sanitation facilities were in place but were not in working condition due to the lack of water, absence of basic amenities like taps, flush system etc. The detailed problems cited by the school heads and teachers were as follows:

- Drainage problem
- Dirty/smelly
- Flush system not working
- Doors not properly close
- Leakage of drainage water from roof
- No electricity
- No water available
- No sweeper for cleaning

- Broken taps
- Broken washbasin

The existing sanitation facilities in most of the schools were very little for the number of students and teachers. However new infrastructure was provided by the Education Department but the Work's Department left the work incomplete. Although the actual infrastructure for student toilets exist, in reality the toilets were unusable and mostly inaccessible.

Table – 7
Availability of Sanitation Facility in School

	Heads		Teachers	
	N	**%**	**N**	**%**
Yes	19	95	65	90
No	1	5	7	10
Total	**20**	**100**	**72**	**100**

Table – 8
Available Sanitation Facilities in Working Condition

	Heads		Teachers	
	N	**%**	**N**	**%**
Yes	12	60	37	51
No	7	35	26	36
Don't know	0	0	2	3
No response	1	5	7	10
Total	**20**	**100**	**72**	**100**

Table – 9
Reasons for Non-functioning of Sanitation Facilities

	Heads		Teachers	
	N	**%**	**N**	**%**
Drainage problem	3	43	7	27
Dirty	2	29	7	27
Not functional	0	0	5	19
Smelly	0	0	1	4
Flush system not working	1	14	2	8
Door not properly closed	1	14	1	4
Leakage of sewerage water from roof	0	0	1	4
No electricity	0	0	3	12
No water	0	0	2	8
Sweeper not available for cleaning	1	14	1	4
Damage taps	1	14	1	4
Damage wash basin	0	0	1	4
No response	1	14	0	0
Base	**7**		**26**	

*multiple response

3.3.2 Alternative of Toilet Facility

In some of the schools the students were allowed to use teachers/staff toilets and vice versa. More than half of the teachers reported that they did not use the facility, and in some cases where the facility for teachers did not exist they went to neighbouring house. However, this was only true for the girls' schools, and the boys had no alternative provided within the school and had to resort to visiting the mosque, or relieving themselves in the back lane.

Table – 10
Alternative if Sanitation Facilities not Present

	Heads		Teachers	
	N	**%**	**N**	**%**
Home	1	5	4	58
Use staff toilets	0	0	1	14
Mosque	0	0	1	14
No response	19	95	1	14
Total	**20**	**100**	**7**	**100**

3.4 Solid Waste Disposable

There was no system of solid waste disposal in a large majority of schools (18 schools). Out of 20 sample schools, 12 schools had only one sweeper, while 4 schools had no sweeper at all.

In schools where there were no sweepers, the teachers, students and staff (peon) cleaned the classrooms themselves. About half of the schools heads and teachers reported the use of dustbins in the classrooms and school grounds but the garbage was observed to be thrown all over the school compound by the observation team.

Table – 11
Solid Waste Disposal

	Heads		Teachers	
	N	**%**	**N**	**%**
Dustbin	12	60	39	54
Sweeper	4	20	15	21
Katchra kundi	0	0	2	3
Students collect	2	10	5	7
Corner/roof of school	0	0	3	4
No response	2	10	8	11
Total	**20**	**100**	**72**	**100**

Table – 12
Collection of Solid Waste

	Heads		Teachers	
	N	**%**	**N**	**%**
Peon	2	10	4	6
Sweeper	17	85	56	79
Children	1	5	3	4
No response	1	5	11	15
Base	**20**		**72**	

*multiple response

3.5 Approach to Solve the Problems

More than half of the schools' heads and teachers have approached the concerned persons to solve the problems regarding water, sanitation and solid waste management. Most of the heads and teachers have approached the following:

- Education department
- Ministry of education
- Deputy education
- President house
- ADO
- Supervisor
- PWD/EDO
- DO
- CDGK

While some teachers mentioned the following:

- Principle/HM
- NGO who adopted the school
- SMC
- Councilor

Only a quarter of the heads and teachers agreed that the existing system is effective. Better management and implementation of existing projects were stated as two important measures to improve the system.

3.6 Water Conservation and Better Management Practices

Both the school heads and teachers were asked about their practices, behaviour, perception and knowledge about the usage of water, wastage of water, conservation and health risks.

3.6.1 Household Water Usage Behaviour

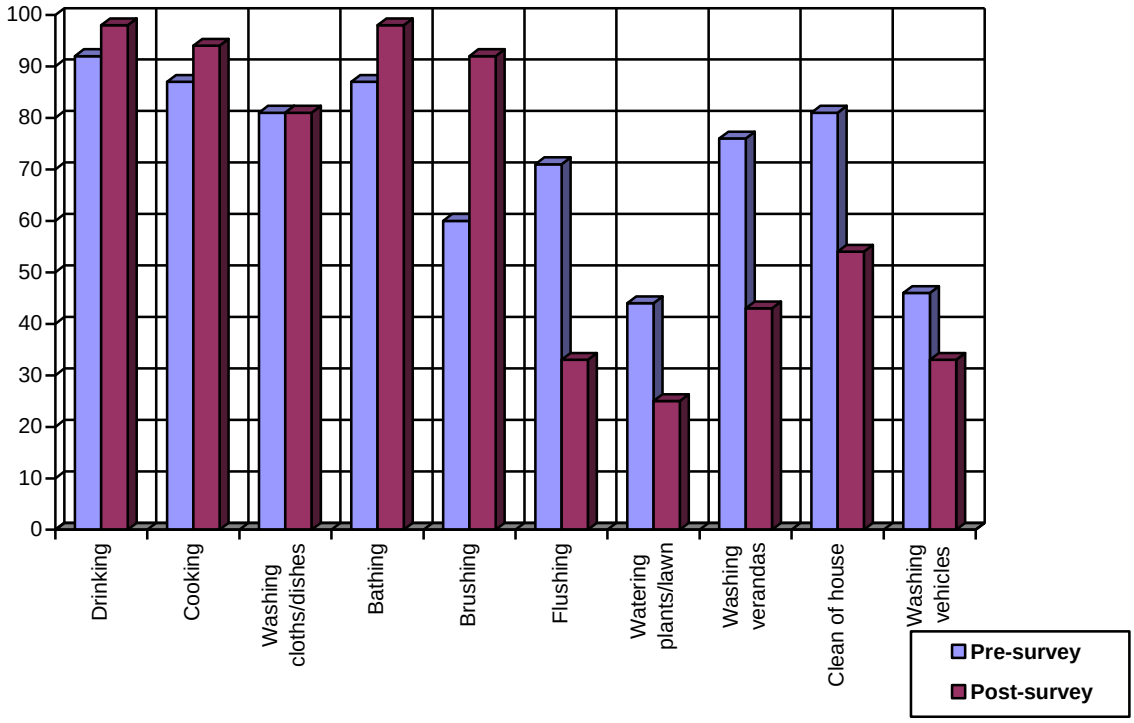
A large majority of school heads and teachers reported that they were using water to fulfill their basic needs (drinking cooking, bathing, brushing and washing) at the household and school levels. While some respondents reported the use of water for toilet flushing, washing vehicles, watering plants and playgrounds. About half of the respondents used water for cleaning of house and washing of verandas.

Table – 13
Water Usage in the Households/School

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Drinking	20	100	65	90	85	92	20	100	70	97	90	98
Cooking	20	100	60	83	80	87	20	100	66	92	86	94
Washing cloths/utensils	15	75	60	83	75	81	15	75	60	83	75	81
Bathing	15	75	65	90	80	87	20	100	70	97	90	98
Brushing	15	75	40	56	55	60	20	100	65	90	85	92
Flushing	15	75	50	69	65	71	3	50	27	40	30	33
Watering plants/lawn	10	50	20	28	30	33	5	25	10	14	15	16
Water playground	5	25	5	7	10	11	5	25	3	4	8	9
Washing verandas/ house	15	75	55	76	70	76	5	25	35	49	40	43
Clean of house/school	10	50	65	90	75	81	10	50	40	56	50	54
Washing vehicles	12	60	30	42	42	46	5	25	25	35	30	33
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-1
Water Usage in the Households/School



There is a prominent decrease of water usage in the post-survey especially for washing of verandas, cleaning of house, watering of plants, lawns and playground and also toilet flushing.

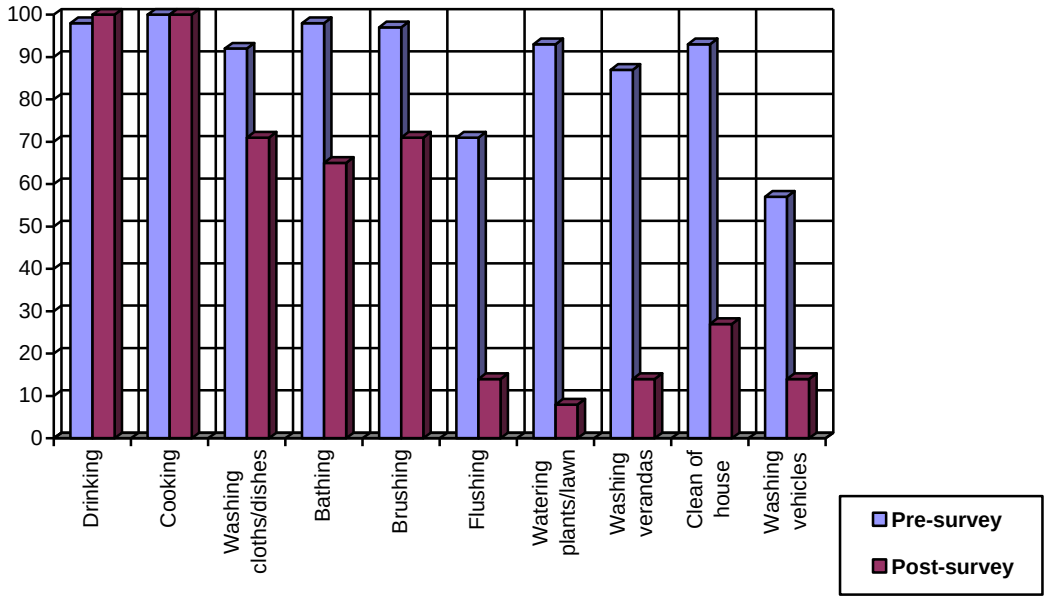
All school heads and teacher reported that they mainly used the water for drinking and cooking by themselves. While more than half of the heads and teachers mentioned washing, brushing and bathing. However some reported the use of water for house cleaning, flushing, washing vehicles and verandas and water plants and lawns.

Table – 14
Purposes the Respondents themselves Use Water for most

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Drinking	20	100	70	97	90	98	20	100	72	100	92	100
Cooking	20	100	72	100	92	100	20	100	72	100	92	100
Washing cloths/utensils	20	100	65	91	85	92	15	75	50	96	65	71
Bathing	20	100	70	97	90	98	10	50	50	96	60	65
Brushing	20	100	69	96	89	97	10	50	55	76	65	71
Flushing	15	75	50	69	65	71	3	15	10	14	13	14
Watering plants/lawn	10	50	55	76	65	71	2	10	5	7	7	8
Water playground	5	25	15	21	20	22	0	0	0	0	0	0
Washing verandas/ house	15	75	65	91	80	87	3	15	10	14	13	14
Clean of house/school	20	100	66	92	86	93	5	25	20	28	25	27
Washing vehicles	12	60	40	56	52	57	3	15	10	14	13	14
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-2
Purposes the Respondnets themselves Use Water for most



A positive change was seen in the post-survey data analysis as the unnecessary usage of water was minimized for most of the daily tasks. So it can be concluded that awareness as well as practice of conservation and better management of water is on the increase among target population of project area.

3.6.2 Identification of Water Wastage

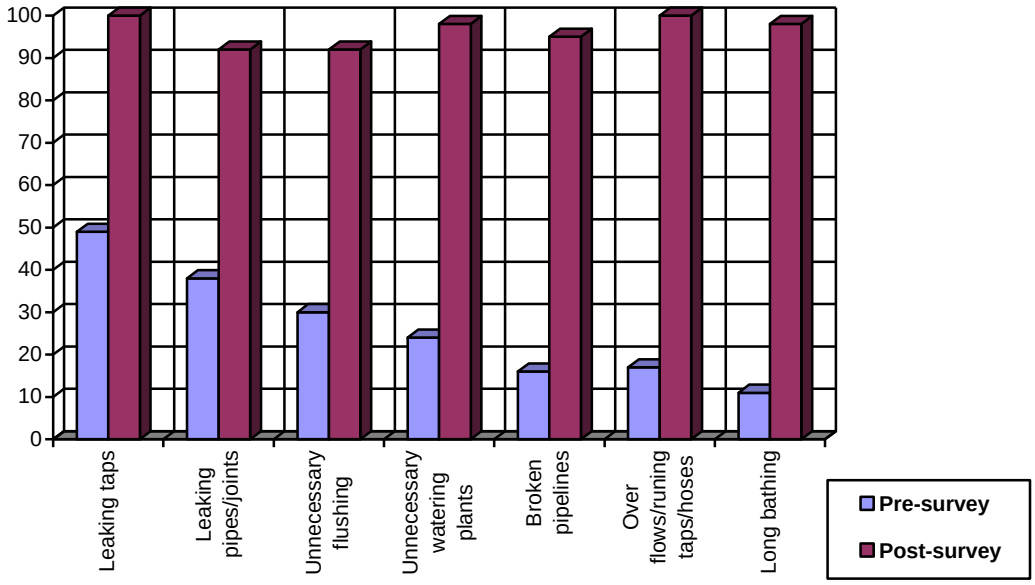
In the opinion of all school heads and teachers most of the water wasted in their daily life was through leaking taps (100 percent), over flowing tanks/running taps and hoses (100 percent). However other majorities of respondents also observed that water was wasted by long bathing, broken pipelines, leaking joints/pipes, unnecessary toilet flushing and watering of plants.

Table – 15
Water Wastage in Daily Life

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Leaking taps	10	50	30	42	45	49	20	100	71	99	92	100
Leaking pipes/joints	15	75	20	28	35	38	18	90	67	93	85	92
Unnecessary toilet flushing	8	40	20	28	28	30	19	95	66	92	85	92
Unnecessary watering plants	7	35	15	21	22	24	20	100	70	97	90	98
Broken pipelines	5	25	10	14	15	16	18	90	69	96	87	95
Over flow/running taps and hose	10	50	6	8	16	17	20	100	72	100	92	100
Long bathing	0	0	10	14	10	11	20	100	70	97	90	98
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-3
Water Wastage in Daily Life



There is a drastic increase found in the post-survey regarding the judgment of the ways in which water is wasted in their surroundings. While in the pre-survey people were not cognizant and did not observe this major issue of wasting water at their houses.

3.6.3 Water Conservation Practices

Water Saving Measures in Toilets

In the post-survey a majority of the school heads and teachers were able to list the verity of water saving measures in toilets. They listed the water saving actions as under:

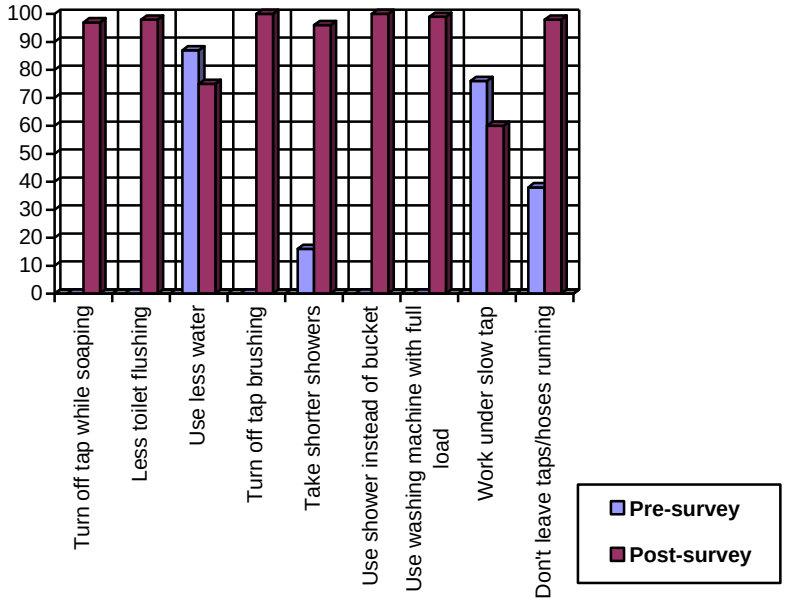
- Turn off tap while brushing teeth
- Take shower instead of using bucket
- Turn off shower while soaping
- Reduce the use of toilet flush
- Take shorter shower
- Use washing machine with full load
- Do not leave the tap and hose running
- Use less water
- Work under slow tap

Table – 16
Water Saving Measures in Toilets

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Turn off the tap while soaping	0	0	0	0	0	0	20	100	69	96	89	97
Less toilet flush	0	0	0	0	0	0	20	100	70	97	90	98
Use less water	20	100	60	83	80	87	3	15	66	92	69	75
Turn off tap while brushing teeth	0	0	0	0	0	0	20	100	72	100	92	100
Take shorter showers/bath	0	0	15	21	15	16	18	90	70	97	88	96
Use shower instead of bucket	0	0	0	0	0	0	20	100	72	100	92	100
Use washing machine with full load	0	0	0	0	0	0	20	100	71	99	91	99
Work under slow taps	20	100	50	69	70	76	5	25	50	69	55	60
Do not leave the tap and hose running	0	0	35	49	35	38	20	100	70	97	90	98
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-4
Water Saving Measures in Toilets



As compared to the findings of the pre-survey, the knowledge about water saving measures in toilets increased greatly. All of the present respondents mentioned several water saving techniques (e.g. turn off tap/shower while brushing/ soaping, take shorter shower or take shower instead of using bucket, use of washing machine only with full load) . On the other hand, at the time of pre-survey, a majority of the school heads and teachers had given very simple answers which were not specific (e.g. try to use less water and work under slow tap).

Water Saving Measures in Kitchen

A large majority of the school heads and teachers mentioned the reuse and recycling (reuse the water used for thawing meat, reuse the water of rinsing veggies into plants and collect the water of washing veggies/fruits in bucket) of water as the measures to conserve water in the kitchen. Other water saving measures were stated as follows:

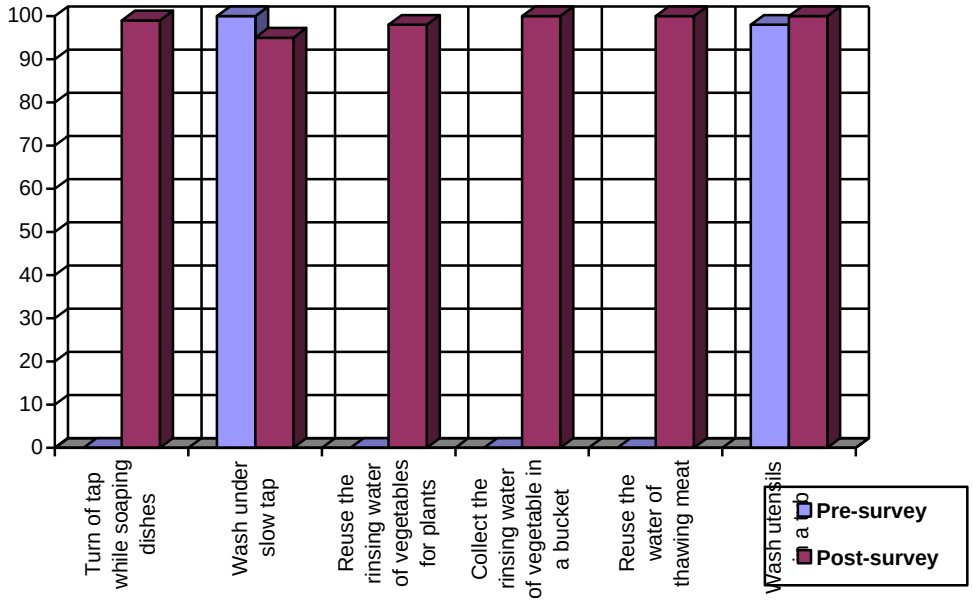
- Wash utensils in two tubs
- Turn off tap while soaping dishes
- Wash utensils under slow tap

Table – 17
Water Saving Measures in Kitchen/Canteen

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Turn off the tap while soaping dishes	0	0	0	0	0	0	20	100	71	99	91	99
Washing of utensils under slow tap	20	100	72	100	92	100	18	90	69	96	87	95
Reuse the water of rinsing vegetables for plants	0	0	0	0	0	0	20	100	70	97	90	98
Collect the water of washing vegetables/ fruits in a tub/bucket	0	0	0	0	0	0	20	100	72	100	92	100
Reuse the water for thawing meat	0	0	0	0	0	0	20	100	72	100	92	100
Wash utensils in a tub to tubs	20	100	70	100	90	98	20	100	72	100	92	100
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-5
Water Saving Measures in Kitchen/Canteen



The above table shows the immense increase from pre-survey findings in the knowledge of water saving measures in the kitchen.

Water Saving Measures while Washing Porch and Watering Plants/Lawns

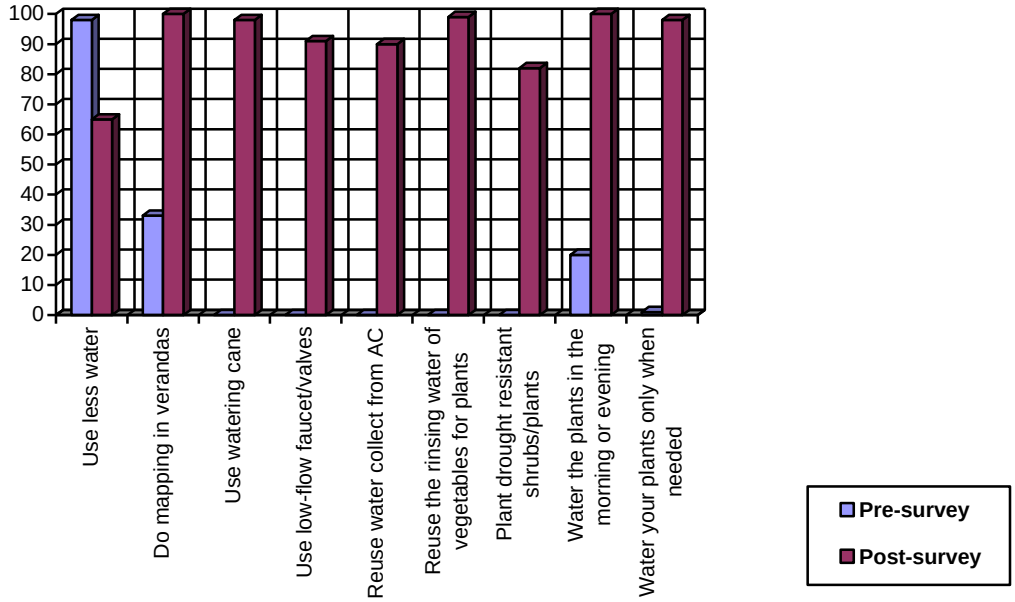
A large majority of the school heads and teachers mentioned a verity of water saving techniques e.g. mopping of porch/verandas, watering the plants in morning or evening time, watering of plants by watering can, reuse the rinsing water of veggies/fruits for water plants, reusing the AC water for watering plants, use low-flow faucet/valves for watering plants and plant drought resistant shrubs and plants.

Table – 18
Water Saving Measures while Washing Porch and Watering Plants/Lawns

	Pre-Survey						**Post-Survey**					
	Heads		**Teachers**		**Total**		**Heads**		**Teachers**		**Total**	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Use less water	20	100	70	97	90	98	10	50	50	69	60	65
Don't wash porch/do mopping	10	50	20	28	30	33	20	100	72	100	92	100
Water the plants by showering cane	0	0	0	0	0	0	20	100	70	97	90	98
Use low-flow faucet/valves	0	0	0	0	0	0	15	75	69	96	84	91
Collect the AC water & reuse for washing & watering plants	0	0	0	0	0	0	18	90	65	90	83	90
Reuse the rinsing water of vegetables for watering plants	0	0	0	0	0	0	19	95	72	100	91	99
Plant drought resistant shrubs and plants	0	0	0	0	0	0	15	75	60	83	75	82
Water the plants/garden in the morning or evening	3	15	0	0	3	3	20	100	72	100	92	100
Water your plants only when needed	1	5	0	0	1	1	20	100	70	97	90	98
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-6
Water Saving Measures While Washing Verandas and Watering Plants/Lawns



The knowledge about the water conservation practices for washing verandas/porch and watering plants/lawns also confirmed a significant increase in water saving techniques as a large majority mentioned recycling of water, mopping of verandas, planting of drought resistance plants/shrubs and watering of plants in the cooler part of the day and only when needed in the post-survey.

It can be concluded that awareness as well as practice of water conservation is on the increase among the target population of project area.

3.6.4 Impact of Polluted Water on Children's Health

All school heads and teachers reported positively 'yes' regarding the knowledge about the causes of illness in children. Polluted water and improper sanitation conditions were mentioned as the main causes of illness.

Table – 19a
Knowledge of Main Causes of Illness in Children

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	8	40	7	10	15	16	20	100	72	100	92	100
No	12	60	65	90	76	94	0	0	0	0	0	0
Total	**20**	**100**	**72**	**100**	**92**	**100**	**20**	**100**	**72**	**100**	**92**	**100**

Figure-7
Knowledge about the Impact of Polluted Water on Children's Health

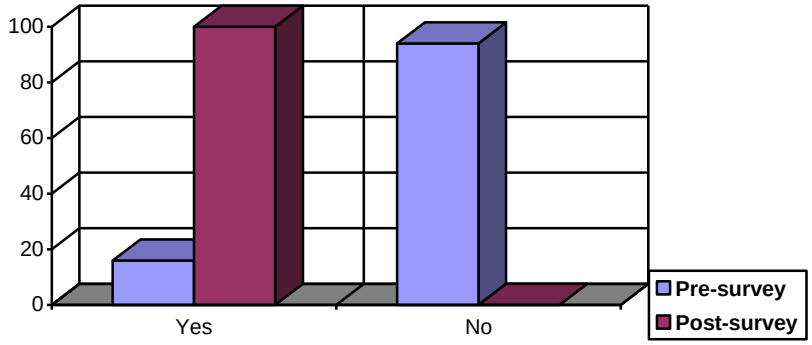


Table – 19b
Main Causes of Illness in Children

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Polluted water	1	12	3	43	4	27	20	100	72	100	92	100
Improper sanitation	3	37	2	29	5	33	20	100	71	99	91	99
Germs	4	50	2	29	6	40	0	0	0	0	0	0
Base	**8**		**7**		**15**		**20**		**72**		**92**	

*multiple response

Figure-8
Main Causes of Illness in Children

All school heads and teachers had knowledge about the illnesses caused by un-safe drinking water. All respondents mentioned diarrhea, typhoid and TB as the illness due to un-safe drinking water.

Table – 20a
Knowledge about the Illness Cause by Un-safe Drinking Water

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	5	25	10	14	25	27	20	100	72	100	92	100
No	10	50	57	79	67	73	0	0	0	0	0	0
Don't know	5	25	5	7	10	10	0	0	0	0	0	0
Total	**20**	**100**	**72**	**100**	**92**	**100**	**20**	**100**	**72**	**100**	**92**	**100**

Figure-9
Impact of Un-Safe Drinking Water on Children's Health

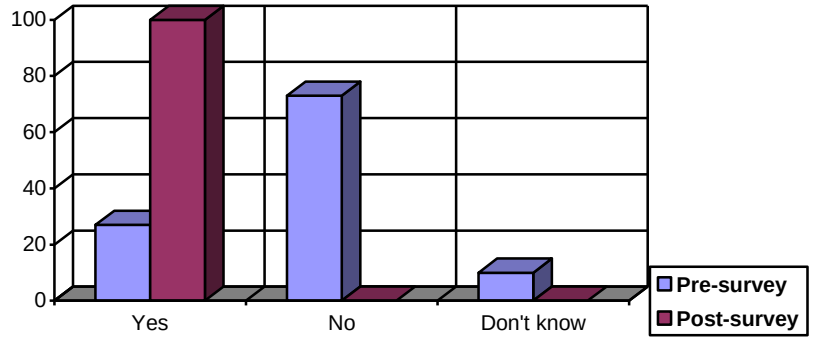
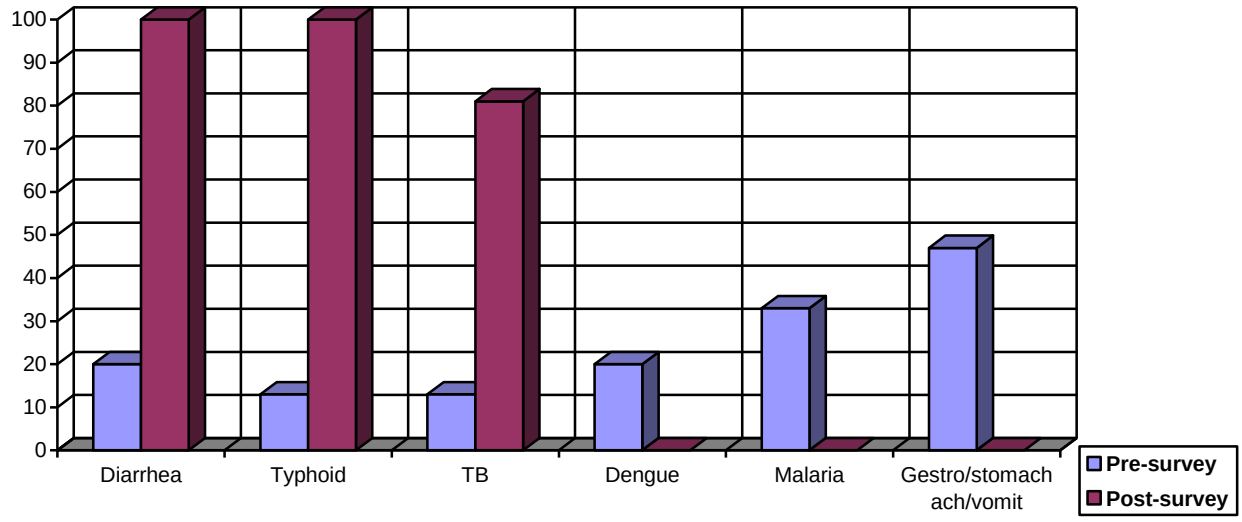


Table – 20b
Illness Cause by Un-safe Drinking Water

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Diarrhea	1	20	2	20	3	20	20	100	72	100	92	100
Typhoid	1	20	1	10	2	13	20	100	72	100	92	100
TB	1	20	1	10	2	13	10	50	65	90	75	81
Dengue	1	20	2	20	3	20	0	0	0	0	0	0
Malaria	2	40	3	30	5	33	0	0	0	0	0	0
Gastro/stomach/vomit	2	40	5	50	7	47	0	0	0	0	0	0
Base	**5**		**10**		**15**		**20**		**72**		**92**	

*multiple response

Figure-10
Type of Illness Cause by Polluted Water



The knowledge about the main causes of illness in children was found to drastically increase (84 percent) in post-survey. However the percentage of respondents reporting about the knowledge of illness caused by un-safe drinking water was also found to have increased (63 percent) in post-survey. It can be concluded that

awareness about both causes and type of illness caused by un-safe drinking water is on the increase among the target population of project area.

3.6.5 Information Sharing on Importance of Water Conservation and Management

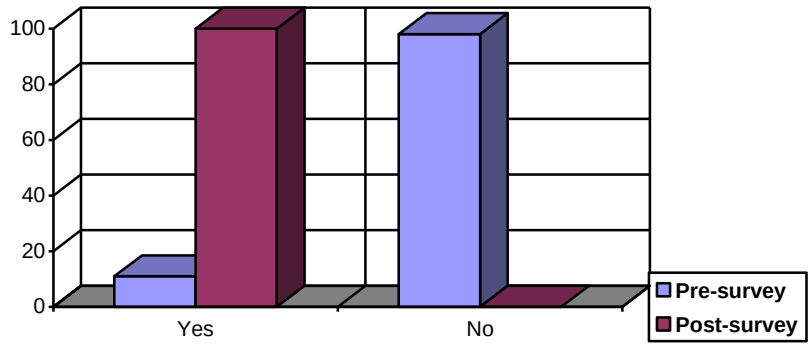
All school heads and teachers reported that they gathered information on the importance of water conservation and better management practices through a lecture/presentation in their school by Hisaar Foundation school activation programme.

Very few school heads and teachers had information on importance of water conservation and management through newspaper/magazine, TV, internet and radio.

Table – 21
Sharing of Information on Water Conservation and Better Management

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	2	10	8	11	10	11	20	100	72	100	92	100
No	18	90	64	98	82	98	0	0	0	0	0	0
Total	**20**	**100**	**72**	**100**	**92**	**100**	**20**	**100**	**72**	**100**	**92**	**100**

Figure-11
Information Sharing on Water Conservation & Better Management



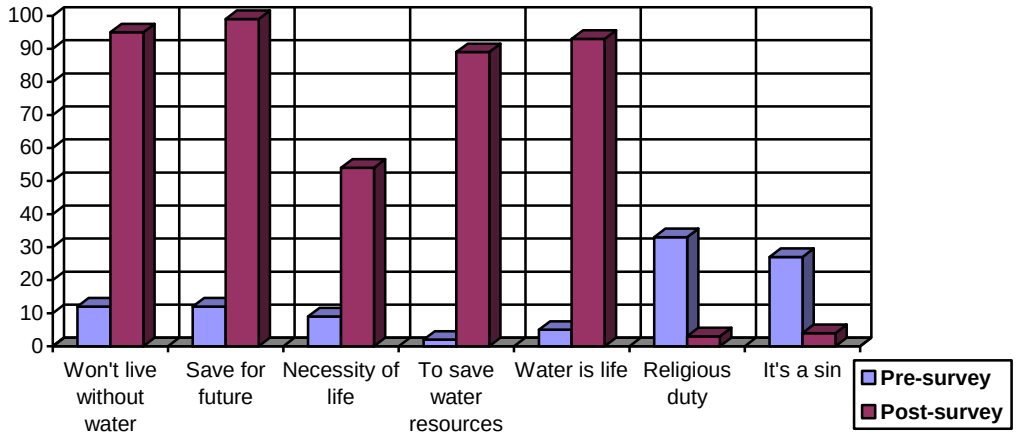
Knowledge about the importance of water conservation and better management in daily life was found greatly. Those school heads and teachers who had knowledge about importance of water conservation and better management, felt that it was important to save water for future, that we would not live without water, water is our life, to save water resources and water is basic need of life.

Table – 22
Importance of Water Conservation and Better Management in Daily Life

	Pre-Survey						Post-Survey					
	Heads		Teachers		Total		Heads		Teachers		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Won't live without water	1	5	510	14	11	12	15	75	72	100	87	95
Save for future	1	5	10	14	11	12	20	100	71	99	91	99
Necessity of life	1	5	7	10	8	9	10	50	40	56	50	54
To save water resources	0	0	2	3	2	2	12	60	70	97	82	89
Water is life	2	10	3	42	5	5	20	100	66	92	86	93
Religious duty	5	25	25	35	30	33	1	5	2	3	3	3
It's a sin	5	25	20	28	25	27	1	5	3	4	4	4
Base	**20**		**72**		**92**		**20**		**72**		**92**	

*multiple response

Figure-12
Improtance of Water Conservation and Better Management



The findings present an encouraging picture of the knowledge of school heads and teachers regarding the importance of water conservation and better management. An overall increase in the knowledge also indicates the success of the school activation programme.

SECTION FOUR

Students Data

There was a total of 20 schools covered across 11 UCs of Saddar Town, (10 boys and 10 girls schools) were surveyed for the purpose of gender comparison.

In each school, 20 children were interviewed across 10 boys and 10 girls schools, to get an equal number of boys and girls sample. However at the time of survey the team found that both boys and girls are enrolled at the primary level in government schools, whereas the education system gets segregated at the secondary level. Therefore, the tables are based on a total of 400 children responses; 141 boys and 259 girls.

4.1 Student's Profile

Students were asked about their age, sex and class in which they studied currently.

About 46 percent of the students were found at lower secondary level while 34 percent were found at higher secondary level. Sixty-eight percent of the students were found in the age group of 11–15 years, while 19 percent fell in the elder age group i.e. 16–20 years.

Table – 23
Age of Students

Years	Boys		Girls		Total	
	N	%	N	%	N	%
5-10	12	8	40	15	52	13
11-15	91	65	181	70	272	68
16 -20	38	27	38	15	76	19
Total	**141**	**100**	**259**	**100**	**400**	**100**

Table – 24
Student's Enrollment

Class	Boys		Girls		Total	
	N	%	N	%	N	%
KG	2	2	1	1	3	1
1-5	19	13	58	22	77	19
6-8	68	48	117	45	185	46
9-10	48	34	75	29	123	31
11-12	4	3	8	3	12	3
Total	**141**	**100**	**259**	**100**	**400**	**100**

4.2 Drinking Water Facility

4.2.1 Sources of Drinking Water

Both boys and girls were asked about the source of drinking water/ where they get the drinking water.

Upon asking the students from the source of their drinking water, it was discovered that only 48 percent of the boys drank water from the school. Forty-four percent brought water

from their homes whereas 12 percent left to get water from the hotel, mosque or petrol pump, with the mosque option being the most popular (8 percent).

In contrast to the boys, 29 percent of the girls used the schools facilities, and 75 percent brought water from home. This is not a sign of the girls' schools providing better facilities but more a sign of the girls resorting to the only other realistic option available to them. This shows the difficulties girls faced in leaving the school to procure water.

Table –25
Source of Drinking Water

	Boys		Girls		Total	
	N	%	N	%	N	%
From school	67	48	74	29	141	35
Bring from home	62	44	194	75	256	64
Hotel	4	3	0	0	4	2
Petrol pump	2	1	0	0	2	1
Mosque	11	8	0	0	11	3
Friends	0	0	2	1	2	1
Base	**141**	**104**	**259**	**105**	**400**	**106**

*multiple response

Together, the overall picture remains that only 35 percent of the children used the school's facilities, while 64 percent relied on water they brought from home. Furthermore, the students that used the school facilities, when asked, mentioned that the water cooler/tank they used was mostly not working, which highlighted that there was no dedicated water facility for the students.

Also, during the interview process a lot of the students complained about the problems they faced because of the limited facilities available to them, especially on hot days when they ran out of water brought from home.

4.2.2 Drinking Water Quality

The students were asked about whether they thought the water they consumed on a daily basis was clean and safe for drinking.

It was surprising to note that 88 percent of the girls and 82 percent of the boys claimed their water (procured from the different options as shown in Table 3) was both clean and safe for consumption. Only 12 percent claimed not to know, which further shows they were honest about their answers.

Table – 26
Consumption of Clean and Safe Drinking Water

	Boys		Girls		Total	
	N	%	N	%	N	%
Yes	115	82	227	88	342	86
No	18	13	32	12	50	12
Don't Know	8	5	0	0	8	2
Total	**141**	**100**	**259**	**100**	**400**	**100**

The students were further asked why they thought the water was clean and safe and where it came from. The answers highlighted the misconceptions and lack of awareness that exists about what clean water is.

Overall, out of the 86 percent of students that claimed the water they drank was clean, 18 percent said it was because it was tap water or brought from home (5 percent). Some 2 percent reported that it looked clean or tasted well and came from a well (1 percent).

Overall, 44 percent of the students said the water they drank was boiled while 16 percent said it was filtered or mineral water. Most of the boiled answers coincided with students who said they brought their water from home **or bought it from the store**, which has nothing to do with the schools' provision of drinking water. This means 60 percent of the students who claimed their water was clean were actually consuming water that was safe for drinking, which equals about 51 percent of the total sample[1].

Table – 27
Opinions Regarding what Constitutes Clean and Safe Drinking Water

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Tap Water	23	20	39	17	62	18
Looks Clean /taste well	5	5	3	1	8	2
Boring Water	0	0	2	1	2	1
Home Water	5	5	8	4	13	4
Filter Water	25	22	22	10	47	14
Boiled Water	35	30	115	51	150	44
Mineral Water	2	2	4	2	6	2
Don't Know	15	13	23	10	37	11
No Response	7	6	13	6	20	6
Base	**115**		**227**		**342**	

*multiple responses

Those students that claimed the water they consumed was not clean or safe, were further inquired why they believed this. The girls had more depth and variety of answers while most of the boys (67 percent) said it was dirty. All of the girls mentioned it was because it was smelly and it looked unclean. While other opinions reported by the girls said it was because the glass was not clean, it was salty water or that worms were observed in the water.

Considering the analysis of the question before this, we can conclude that approximately 37 percent of the respondents did not consume water that was clean or safe, even if they thought they did[2]. This, we believe, is quite a dire situation, considering the implications that unclean water consumption can have on health and the spread of water-borne diseases.

[1] (203) 60% of the (342) 86% of students that said yes= 51% of total sample
[2] 12% (no answers in table 4) + 25% (students that said yes in table 4 but was discovered were referring to tap/well water/home etc in table 5)= 37%

Table – 28
Opinions Regarding What Constitutes Unclean and Unsafe Drinking Water

	Boys		Girls		Total	
	N	%	N	%	N	%
Dirty water	12	67	4	28	16	32
Look unclean	0	0	32	100	32	64
Smelly	0	0	32	100	32	64
Glass not cleaned	0	0	18	56	18	36
Salty water	0	0	1	3	2	4
Warms in water	0	0	17	53	17	34
No facility	1	6	0	0	2	4
No response	3	17	2	6	5	10
Base	**18**		**32**		**50**	

*multiple responses

4.2.3 Water Facilities in the Schools

The students (boys and girls) were further asked if they used the drinking water facility in their school.

A total of 47 percent of the students used the water facility available in their schools, if we see that data by gender, 52 percent boys and 45 percent girls said that they used the facility. This is interesting as it proves a point made earlier, that the girls tended to use the water facility less than the boys because of fewer options available to them, and even then most of them brought water from their homes and used the school's facility as a last resort.

It's also important to note that the schools did not have a dedicated water facility for the students, and in answering this question the respondents were referring to the water facility which was a direct tap.

Table – 29
Use of Schools' Water Facility

	Boys		Girls		Total	
	N	%	N	%	N	%
Yes	73	52	115	45	188	47
No	68	48	143	55	211	53
Don't Know	0	0	1	0	1	0
Total	**141**	**100**	**259**	**100**	**400**	**100**

The students that responded 'yes' to using the schools' water facility were asked about what type of facility they used. Eighty-four percent of girls and 40 percent of the boys mentioned a 'tap' as the type of facility used by them. While 85 percent boys and 51 percent girls also cited the water cooler. About 9 percent of girls inquired about what type of water facility was used by them in the school, answered water tank.

Table – 30
Type of Water Facility Used in the School

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Tap	29	40	94	82	123	31
Water tank	0	0	10	9	10	3
Water cooler	61	84	59	51	120	30
No response	4	5	1	1	5	1
Base	**73**	**129**	**115**	**143**	**400**	**65**

*multiple responses

The students that responded 'no' for using the schools' water facility were questioned behind their reasons for lack of use.

The students that said they did not use the water facility in school cited the lack of the existence of a water facility as the primary reason, with 43 percent boys and 30 percent girls choosing that option. Some of the children also mentioned the water facility was out of order, lack of water and lack of taps (only one tap).

Comparing the data by gender, girls were more frequently responded than boys with varied answers. Most of the students said it was because the water was turbid (23 percent girls and 18 percent boys) and not clean/unsafe (23 percent girls and 18 percent boys).

Only 4 percent of boys and 16 percent of girls said it was because it was smelly. Some of the girls also mentioned other reasons such as the presence of worms in the water, water was not boiled and glasses were not available.

Table – 31
Reasons Behind the Lack of Use of Schools ' Water Facility

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Water facility not available	29	43	43	30	72	34
Facility not working properly	1	1	1	1	2	1
Only one tape in school	0	0	1	1	1	0
Lack of water	2	3	2	1	4	2
Water not clean/unsafe	12	18	33	23	45	20
Worms in water	0	0	1	1	1	0
Smelly	2	4	24	16	27	12
Turbid	12	18	33	23	45	21
Not boiled	0	0	1	1	1	0
Glass not available	0	0	2	1	2	1
Not allowed by mother	0	0	2	2	2	0
No habit	1	1	4	3	5	2
No response	10	15	19	13	29	14
Base	**68**	**100**	**143**	**101**	**211**	**96**

*multiple responses

More than 50 percent of boys and girls reported that the existing water facility was either not functioning or did not exist. Following were the main reasons of non-functionality of existing water facilities in the schools:

- Dirty and smelly water
- None availability of water/no water connection
- Damaged pipe line
- Broken/missing taps
- Water facility is damaged
- Water tank is out of order
- Glass not available
- Salty water
- No cold water
- Less number of taps

Table – 32
Working Condition of Existing Water Facility

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Yes	58	41	115	44	173	43
No	41	29	64	25	105	26
No facility in school	31	22	68	26	99	25
Don't know	11	8	12	5	23	6
Total	**141**	**100**	**259**	**100**	**400**	**100**

Table – 33
Reasons of Non-functioning of Existing Water Facility

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Dirty/smelly	11	27	25	40	36	34
No water available/no water connection	10	24	16	25	26	25
Pipe line is damaged	6	15	0	0	6	6
Tap is broken/missing	2	6	2	3	4	4
Facility is finished/ damaged	1	3	1	2	2	2
Water tank is out of order	0	0	1	2	1	1
Glass not available	0	0	1	2	1	1
Water is salty	1	3	1	2	2	2
No cold water	1	3	1	2	2	2
Less number of taps	0	0	1	2	1	1
	41		**64**		**105**	

*multiple responses

4.3 Toilets Facility

4.3.1 Location of Toilets Used

The students were asked where they went to use the toilet during school hours.

The table below shows that, 52 percent of boys and 47 percent of girls either went home during and after school time, or visited the toilet before coming to school in the morning. The survey also discovered that while there were limited options available to girls, 13 percent of the boys reported going to the mosque to use the toilet facilities and 4 percent of the boys mentioned relieving themselves in the back lane.

The reasons to use the toilet facilities at home for the girls was mainly that the school toilets were extremely dirty/smelly (52 percent), some of the girls also reported that they had no need or no habit of using school toilets. While the boys gave three main reasons: first was the same as girls extremely dirty/smelly (32 percent), second toilets was in bad condition (21 percent) and thirdly due to lack of water or no water supply for toilets (16 percent). About a quarter of boys and girls mentioned that the reason behind not using the school toilets was because their home was near to school.

Table – 34
Locations of Toilets Used

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Toilet with in school compound	53	38	136	53	189	47
Mosque	19	13	0	0	19	5
Back lane	5	4	0	0	5	1
Home	73	52	123	47	196	49
Total	**141**	**106**	**259**	**103**	**400**	**104**

***multiple responses**

Table – 35
Reasons for not using Toilet Facility in the School

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
In bad Condition	18	21	10	8	28	13
Dirty/ smelly toilet	28	32	64	52	92	44
Lack of water/no water	14	16	4	3	18	8
Teacher not give permission for toilet	0	0	1	1	1	0
Lack of toilet facility/ students from primary section also used the facility	0	0	4	3	4	1
No need/no habit	8	9	18	15	36	17
Home is near to school	22	25	22	18	44	21
Base	**88**		**123**		**211**	

*multiple responses

4.3.2 Toilet Facilities in the Schools

When students were asked whether the toilet facilities available in the school were functional or not, about 38 percent of boys and 32 percent of girls reported negatively regarding the functioning of toilets facility in school.

Some of the students did not understand the question and replied that they did not know (35 percent boys and 8 percent girls), but were able to explain upon further questioning. They reported that there was no running water, or any sort of essential fixtures in the toilets. Needless to say, as there was no facility available to the boys in the first place, the question rendered most of the respondents unable to answer this question.

Table – 36
Working Condition of Existing Toilet Facility

	Boys		Girls		Total	
	N	**%**	**N**	**%**	**N**	**%**
Yes	52	37	156	60	208	52
No	53	38	83	32	136	34
Don't know	36	25	20	8	56	14
Total	**141**	**100**	**259**	**100**	**400**	**100**

Those students who answered 'no' to the question of their toilet facilities being in functioning order were asked why the facilities were unusable for them.

The reasons for the toilets lying unused are documented through the responses below and consist of varied and alarming reasons, which highlight the difficulties faced by the children. About 42 percent boys and 28 percent girls reported that the toilets were unclean, while another 21 percent girls and 15 percent boys reported that there was no running water. 17 percent girls and 8 percent of the boys interviewed pointed out that the doors in the toilets were broken or had no lock. Similarly, another 17 percent boys and 7 percent girls reported the toilets were broken.

Some 15 percent girls and 8 percent boys reported that the toilets fixtures (flush system, taps and washbasin) were either broken or missing. Some girls also mentioned the non availability of soap, *lotas* and lack of electric connection in the toilets.

Table – 37
Reasons for Non-Functioning of Toilets Facilities

	Boys		Girls		Total	
	N	%	N	%	N	%
Dirty/smelly	22	42	23	28	45	33
Lack of water/no water available	8	15	18	21	26	19
Broken doors/no door lock	4	8	14	17	18	13
Toilet is broken	9	17	6	7	15	11
Drainage system not working	4	8	4	5	8	6
Flush not working/ no flush system	3	6	7	8	10	7
Taps are broken	1	2	2	2	3	2
Broken washbasin/no washbasin	0	0	4	5	4	3
Soap not available	0	0	1	1	1	1
No electricity connection in the toilets	0	0	1	1	1	1
Lotas are not available	0	0	1	1	1	1
Less no of toilet as compared to students	0	0	3	4	3	2
No response	2	4	0	0	2	1
Base	**53**		**83**		**136**	

*multiple responses

4.3.3 Cleaning of Toilets

Both boys and girls were further asked regarding the cleanliness of the available toilets in the schools.

In this regard about half of the girls and quarter of boys reported ‘yes’. The data shows that the girls had also had more observations as they used the toilets more as compared to boys.

Table – 38
Cleaning of Available Toilet Facility in the School

	Boys		Girls		Total	
	N	%	N	%	N	%
Yes	37	26	128	49	165	42
No	71	51	122	47	193	48
Don’t know	13	9	8	3	21	5
No response	20	14	1	1	21	5
Total	**141**	**100**	**259**	**100**	**400**	**100**

Apart from the strong dirty smell that oozed from toilets, the toilets were also filthy, with defecation littering the floor and area around the toilets. Lack of cleanliness and lack of water supply was another reason of unclean condition of the toilets. While girls also mentioned that lack of awareness and lack of toilet facilities were also the reasons for the unclean toilets.

Table – 39
Reason of Considering the Toilets Unclean

	Boys		Girls		Total	
	N	%	N	%	N	%
Dirty/filthy	50	70	66	54	116	60
Oozing smell	15	21	17	14	32	17
Not clean on daily basis	10	14	13	11	23	12
Lack of water	4	6	14	11	18	9
Less no of toilets as compared to no of students	0	0	2	2	2	1
Lack of awareness	0	0	1	1	1	1
No response	1	1	3	3	4	2
Base	**71**		**122**		**193**	

*multiple responses

4.3.4 Water Supply in the Toilets

Students were asked more about the water supply available in the school toilets.

Again more girls than boys were able to respond regarding the water supply available in the schools' toilet. About 77 percent girls and 45 percent boys reported that water was available in the school toilets.

Those students who answered yes, were further questioned regarding how the water was supplied to the school toilets. An overwhelming majority of students reported through tap, while fewer girls also reported through bucket/cans.

Table – 40
Water facility available in the toilet

	Boys		Girls		Total	
	N	%	N	%	N	%
Yes	64	45	198	77	262	66
No	40	28	47	18	87	22
Don't know	16	12	13	5	29	7
No response	21	15	1	0	22	5
Total	**141**	**100**	**259**	**100**	**400**	**100**

Table – 41
How the water supply to the Toilets

	Boys		Girls		Total	
	N	%	N	%	N	%
Tap	62	97	189	95	251	96
Bucket / cans	0	0	3	2	3	1
Washbasin	12	19	5	3	17	6
Water tank	0	0	3	2	3	1
No response	2	3	5	3	7	3
Base	**64**	**119**	**198**	**105**	**262**	**107**

*multiple responses

4.4 Garbage Disposal

The students were asked how the garbage was collected inside and outside the classrooms and the observation team tried to find out any prevailing method of safe disposal of solid waste management.

Only a quarter of students were able to report that inside the classrooms the garbage was collected in dustbins, while about 39 percent reported that the sweeper collected garbage from the classes. Some 17 percent students also mentioned that they just threw their garbage outside the window (11 percent boys and 6 percent girls) and threw garbage on the floor (14 percent boys and 5 percent girls). The data shows that more boys than girls mentioned their habit of throwing litter on the floor or outside the window. In case of non availability of sweeper, students (11 percent girls and 10 percent boys) and staff (peon) also collected litter from the classrooms.

Outside the classrooms, most of the students reported that sweeper (69 percent boys and 57 percent girls) collected the garbage, while a quarter also mentioned that garbage was spread on the floor (24 percent boys and 15 percent girls).

The observation team also noted that there were wrappers and papers littered all over the school compound, while in some schools garbage was thrown in the corner or at the back side of the school. And the so called 'dustbins' were just dirty tin buckets, which was also a source of germs for students. The survey team also noted that there appeared to be no method for the collection or disposal of the garbage that was found due to the lack of sanitation worker/sweeper.

Table – 42
Garbage Disposal

	Inside the class room						Outside the class room					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Dustbin	25	18	100	39	125	31	1	1	31	12	32	8
Sweeper	65	46	92	36	157	39	98	69	147	57	245	61
Outside window	16	11	16	6	32	8	0	0	0	0	0	0
Floor	20	14	13	5	33	9	34	24	40	15	74	19
Students	14	10	29	11	43	11	4	3	18	7	22	5
Peon	1	1	1	0	2	1	1	1	3	1	4	1
Don't know	0	0	0	0	0	0	3	2	6	2	9	2
No response	0	0	8	3	8	2	0	0	14	6	14	4
Total	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

4.5 Water Conservation and Better Management Practices

Both boys and girls were further asked about their practices, behaviour, perception and knowledge about the usage of water, wastage of water, conservation and health risks.

4.5.1 Household Water Usage Behaviour

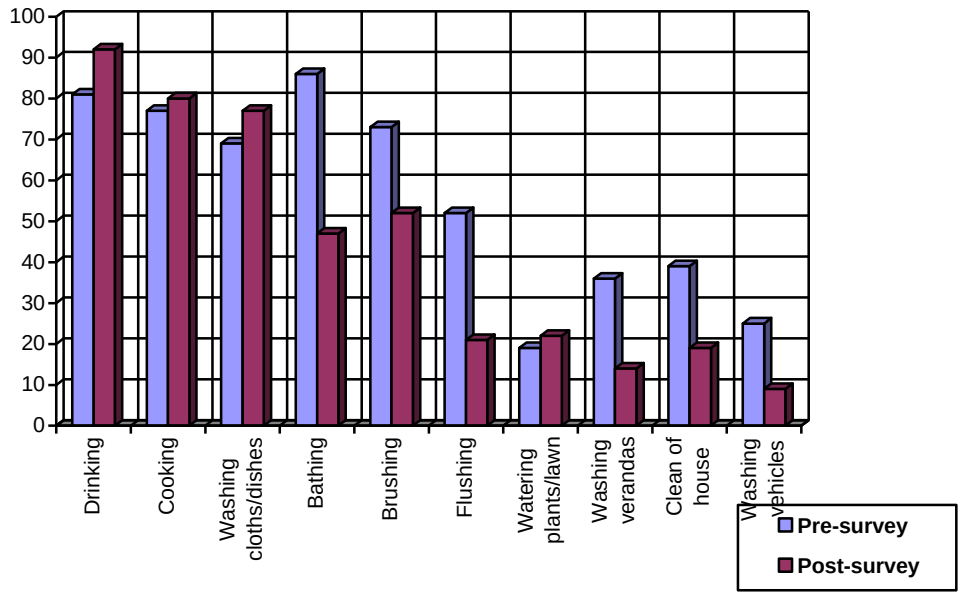
When students were asked regarding their purpose of using water in their household/school, a majority of both boys and girls mentioned the basic use of water in their household, that is, mainly for drinking, cooking, washing, bathing and brushing.

Table – 43
Water Usage in the Households/School

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Drinking	110	78	215	83	325	81	140	99	228	88	368	92
Cooking	100	71	210	81	310	77	120	85	200	39	320	80
Washing	88	62	188	73	276	69	100	71	210	81	310	77
Bathing	122	87	222	86	344	86	88	62	100	39	188	47
Brushing	111	79	181	70	292	73	90	64	120	46	210	52
Toilet flushing	98	69	110	42	210	52	35	25	50	19	85	21
Watering plants/ lawn	50	35	20	8	70	18	41	29	30	12	71	18
Water playground	5	3	0	0	5	1	10	7	0	0	10	3
Washing verandas/ house	55	39	87	34	142	36	24	17	34	13	58	14
Clean of house	6	4	150	58	156	39	17	12	60	23	77	19
Watering animals	0	0	0	0	0	0	2	1	0	0	2	1
Washing vehicles	50	35	0	0	35	9	25	18	10	4	35	9
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-13
Households Water Usage Behaviour



Then they were requested to explain the purposes for which they themselves used water the most (priority list). In this regard they again reported the basic use of water like drinking, cooking and washing. Comparing the data by gender, more girls than boys reported the use of water for household chores by themselves i.e. cooking (93 percent girls and 70 percent boys) and washing clothes/utensils (85 percent girls and 81 percent boys). While none of the boys reported using water for some other household chore like washing verandas (12 percent girls) and cleaning the house (21 percent girls).

However on the other hand the data shows that the boys had more of a change in their water usage habits and behaviour, as there was a lesser percentage of boys as compared

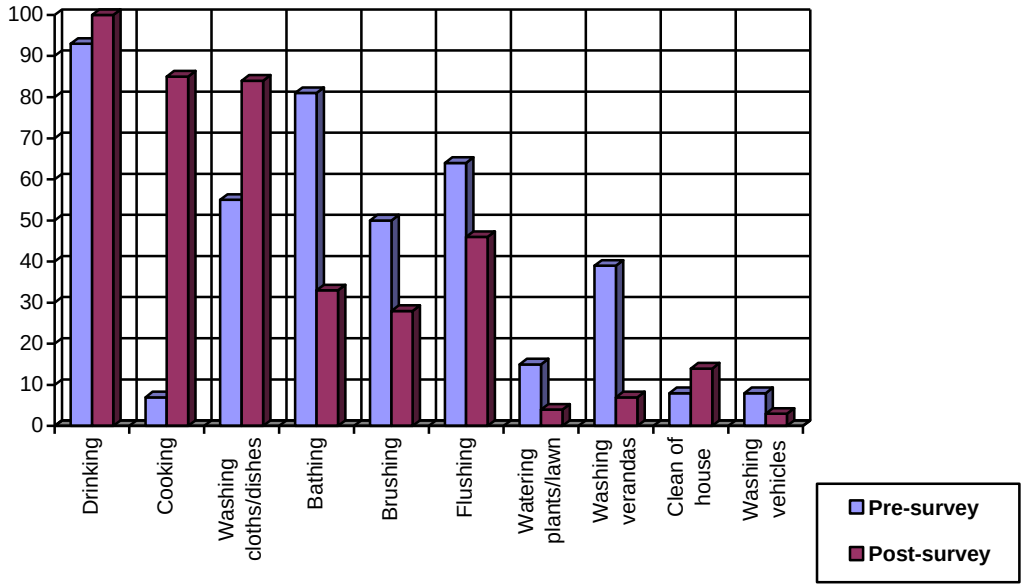
to girls that reported the use of water for bathing (39 percent girls and 24 percent boys), brushing (34 percent girls and 18 percent boys) and toilet flushing (49 percent girls and 40 percent boys) at their priority listing.

Table – 44
The Most Common Purpose of Water Use

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Drinking	130	92	242	93	372	93	141	100	259	100	400	100
Cooking	100	71	211	81	311	78	99	70	240	93	339	85
Washing cloths/utensils	20	14	200	77	220	55	115	81	220	85	335	84
Bathing	100	71	222	86	322	81	34	24	100	39	134	33
Brushing	101	72	100	39	201	50	25	18	88	34	113	28
Toilet flushing	100	71	156	60	256	64	57	40	128	49	185	46
Watering plants/lawn	46	33	15	6	61	15	7	5	10	4	17	4
Washing verandas/ house	55	39	100	39	155	39	0	0	30	12	30	7
Clean of house/school	0	0	33	13	33	8	0	0	55	21	55	14
Watering animals	0	0	0	0	0	0	2	1	0	0	2	1
Washing vehicles	33	23	0	0	33	8	10	7	0	0	10	3
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-14
Purposes the Children's themselves Use Water for most



The above table shows a great change in water usage behaviour and habits among both boys and girls in the post-survey as compared to the pre-survey. For example the use of water for washing verandas and vehicles were decreased by 32 percent and 5 percent respectively.

The proportion of boys and girls that reported water use for bathing, brushing and toilet flushing also decreased in post-survey. This decrease was more prominent among boys as compared to girls.

4.5.2 Identification of Water Wastage

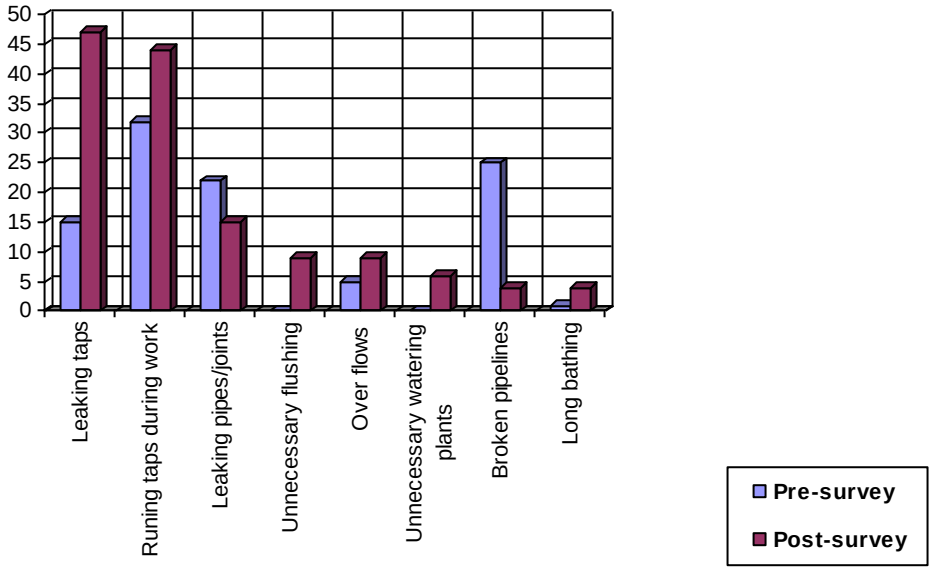
Furthermore students were asked their observations regarding the ways through which water was wasted in their households/schools. About half of the students observed that leaking taps and running taps were left on while working. The other ways students noted through which water was being wasted were leaking pipes/joints, unnecessary toilet flushing, overflow of tanks, unnecessary watering of plants, broken pipelines and long bathing.

Table – 45
Water Wastage in Households and Schools

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Leaking taps	11	8	50	19	61	15	96	68	93	36	189	47
Running taps during work	40	28	90	35	130	32	97	69	80	31	177	44
Leaking pipes/joints	30	21	60	23	90	22	33	23	28	11	61	15
Unnecessary toilet flushing	0	0	0	0	0	0	14	10	23	9	37	9
Over flow	10	7	9	3	19	5	13	9	25	10	38	9
Unnecessary watering plants	0	0	0	0	0	0	13	9	12	5	25	6
Broken pipelines	50	35	50	19	100	25	4	3	12	5	16	4
Throw half after drinking	0	0	0	0	0	0	8	6	0	0	8	2
Long bathing	2	1	3	1	5	1	0	0	15	6	15	4
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-15
Water Wastage in Daily Life



Regarding the wastage of water, more ways were mentioned in post-survey as compare to pre-survey.

4.5.3 Water Conservation Practices

Water Saving Measures in Toilets

When students were asked regarding water saving measures that they used in the toilets, most of the boys and girls were able to list a number of water saving practices in the toilet. Following were the water saving measures reported by students:

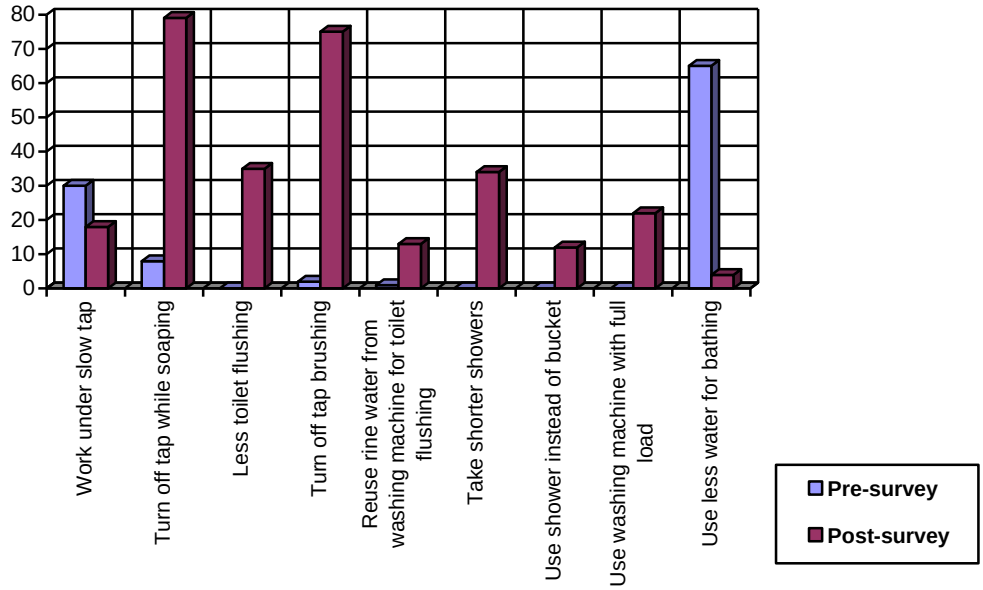
- Turn off tap while soaping
- Turn off tap while brushing
- Less toilet flushing
- Take shorter shower
- Use washing machine only with full load
- Work under slow tap
- Collect rinse water from washing machine for toilet flushing
- Take shower instead of using bucket

Table – 46
Water Saving Measures in Toilets

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Work under slow tap	50	35	71	27	121	30	38	27	33	13	71	18
Turn off the tap while soaping	10	7	21	8	31	8	110	78	208	80	318	79
Less toilet flush	0	0	0	0	0	0	60	43	82	32	142	35
Turn off tap while brushing	5	3	3	1	8	2	100	71	200	77	300	75
Collect rinse water from washing machine for flushing toilet	0	0	2	1	2	1	4	3	50	19	54	13
Take shorter showers	0	0	0	0	0	0	50	35	87	32	137	34
Take shower instead of bucket	0	0	0	0	0	0	15	11	32	12	47	12
Use washing machine with full load	0	0	0	0	0	0	5	3	82	32	87	22
Use less water for bathing	100	71	162	63	262	65	13	9	5	2	18	4
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-16
Water Saving Measures in Toilets



Several water saving measures and practices for toilets were reported in the post-surveys, while in the pre-survey students mentioned only few measures to save water in toilets. So we can conclude that a marked improvement was found through the school water conservation and better management activation programme amongst the students.

Water Saving Measures in Kitchen

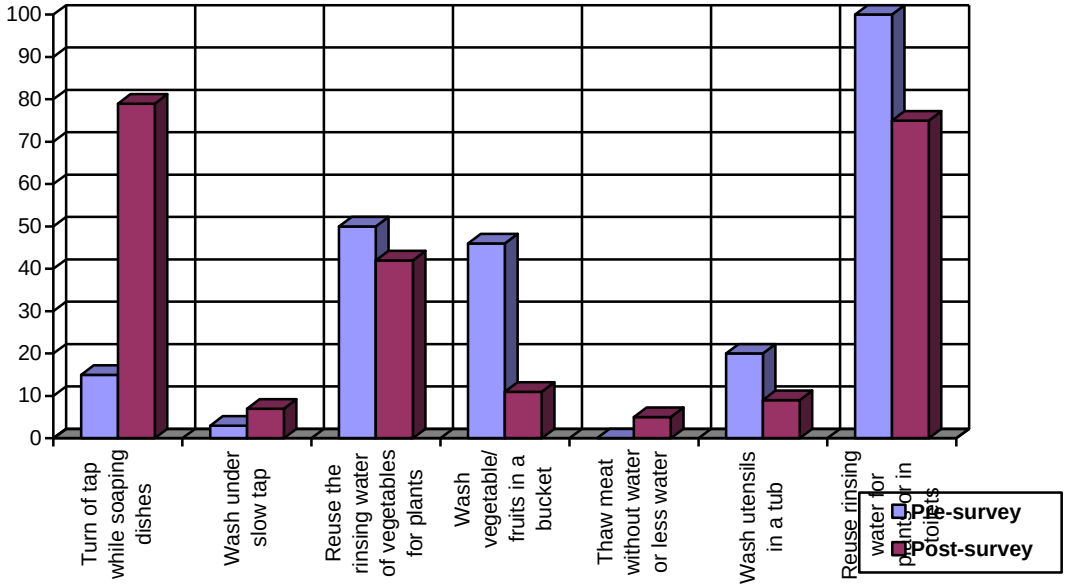
In addition when students were asked regarding the water saving measures they used in the kitchen, a majority of boys and girls reported that turning off taps while soaping dishes and reusing the rinsing water for watering plants or reduction in toilet flushing as water saving practices for kitchen. While others mentioned the reuse of rinsing water for vegetables and fruits for watering plants, as well as collecting the rinsing water for vegetables and fruits in a bucket and washing utensils in a tub.

Table – 47
Water Saving Measures in Kitchen/Canteen

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Turn off tap while soaping dishes	10	7	50	19	60	15	110	78	208	80	318	79
Washing under slow tap	60	72	108	42	168	42	3	2	25	10	28	7
Reuse the rinsing water of vegetables /fruits	0	0	0	0	0	0	50	35	120	46	170	42
Wash vegetables and fruits in a bucket	50	35	199	77	249	62	46	33	100	39	43	11
To thaw the meat without water/thaw one time in water	0	0	0	0	0	0	0	0	50	19	19	5
Wash utensils in a tub	30	21	200	77	230	57	20	14	18	7	38	9
Reuse rinsing water for plants or in wash room	0	0	0	0	0	0	100	71	200	77	300	75
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-17
Water Saving Measures in Kitchen/Canteen



Regarding the water saving practices in the kitchen, an increasing number of students found in post-survey as compared to pre-survey, which shows a great change and improvement in their water usage habits and behaviour for sustainability of existing water resources.

Water Saving Measures while Washing Porch and Watering Plants/Lawns

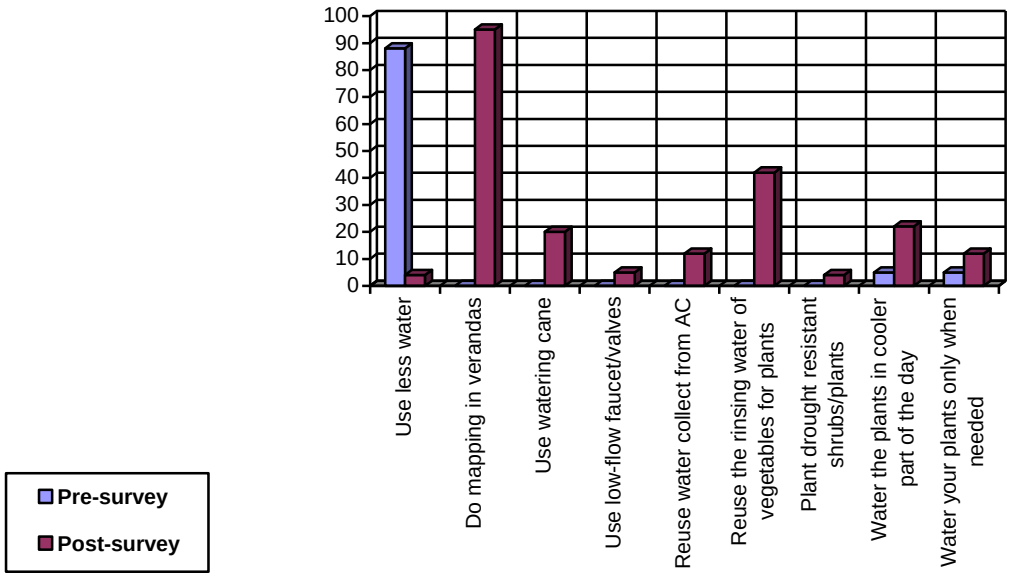
In addition to water saving measures in the toilets and kitchen, students were also asked regarding the water saving measures used while washing verandas and watering plants/lawns. In washing verandas a large majority of both boys and girls mentioned that mopping of verandas to save water. However several water saving measures were already in practice of students for watering of plants i.e. using watering cans, reusing the rinsing water, watering the plants in the cooler part of the day, watering the plants only when needed, collecting the AC water for plants, using of low-flow faucets/valves and planting drought resistant plants.

Table – 48
Water Saving Measures while Washing Porch and Water Plants/Lawns

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Use less water	130	92	222	86	352	88	10	7	8	3	18	4
Mopping the veranda	0	0	0	0	0	0	130	92	259	100	379	95
Water the plants by watering cans	0	0	0	0	0	0	40	28	42	16	82	20
Use low-flow faucet/valves	0	0	0	0	0	0	0	0	22	8	22	5
Collect the AC water & reuse for washing and watering plants	0	0	0	0	0	0	28	20	20	8	48	12
Reuse the rinsing water for watering plants	0	0	0	0	0	0	4	3	166	64	170	42
Plant drought resistant plants	0	0	0	0	0	0	18	13	0	0	18	4
Water the plants in the cooler part of the day	0	0	22	8	22	5	60	42	30	12	90	22
Water your plants when needed	10	7	10	4	20	5	10	7	40	15	50	12
No response	2	1	5	2	7	1	10	7	0	0	10	3
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-18
Water Saving Measures While Washing Verandas and Watering Plants/Lawns



Practice of implementing water saving measures while washing verandas and watering plants also appears to be very improved from the pre-survey data as more students reported reuse and recycling of water.

4.5.4 Impact of Polluted Water on Children's Health

Students were further asked regarding their knowledge of the major causes of illness for most of the children in Pakistan. Regarding this all the boys and girls replied positively, and reported that polluted water and improper sanitation conditions were the main causes of illness in children.

Table – 49a
Knowledge of Main Causes of Illness in Children

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	10	7	12	5	22	5	141	100	259	100	400	100
No	111	79	207	80	318	79	0	0	0	0	0	0
Don't know	0	0	21	8	21	5	0	0	0	0	0	0
No response	20	14	19	7	39	10	0	0	0	0	0	0
Total	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

Figure-19
Knowledge about the Impact of Polluted Water on Children's Health

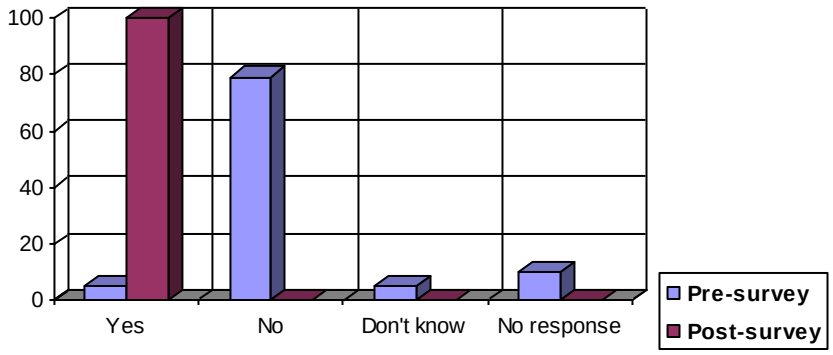
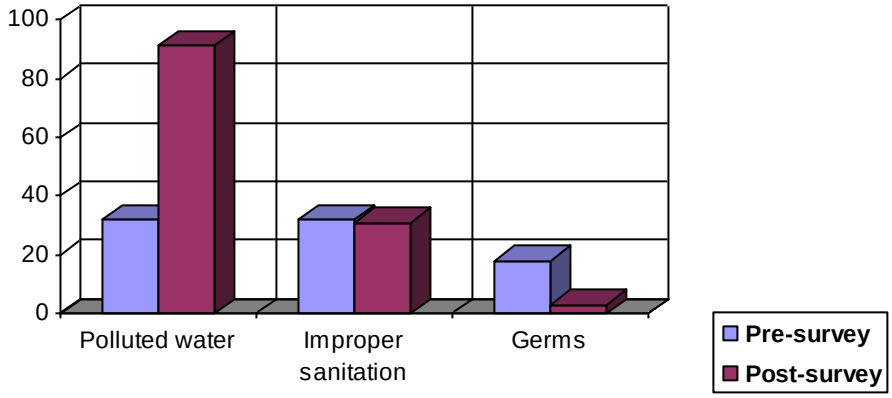


Table – 49b
Main Causes of Illness in Children

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Polluted water	2	20	5	42	7	32	125	89	241	93	366	91
Improper sanitation	3	30	4	33	7	32	10	7	113	44	123	31
Germs	10	100	8	67	18	82	9	6	5	2	14	3
Base	**10**	**100**	**12**	**100**	**22**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-20
Main Causes of Illness in Children



In addition, when they were asked about the type of illness in children due to un-safe drinking water in Pakistan. A majority of them reported diarrhea (86 percent boys and 85 percent girls), about half mentioned typhoid (57 percent boys and 45 percent girls) and more than a quarter said TB (42 percent boys and 19 percent girls).

Table – 50
Knowledge about the Illness Cause by Un-safe Drinking Water

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	10	7	12	5	22	5	140	99	254	98	394	99
No	90	64	100	39	190	47	0	0	0	0	0	0
Don't know	21	15	100	39	121	30	0	0	0	0	0	0
No response	20	14	47	18	67	17	1	1	5	2	6	1
Total	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

Figure-21
Impact of Un-Safe Drinking Water on Children's Health

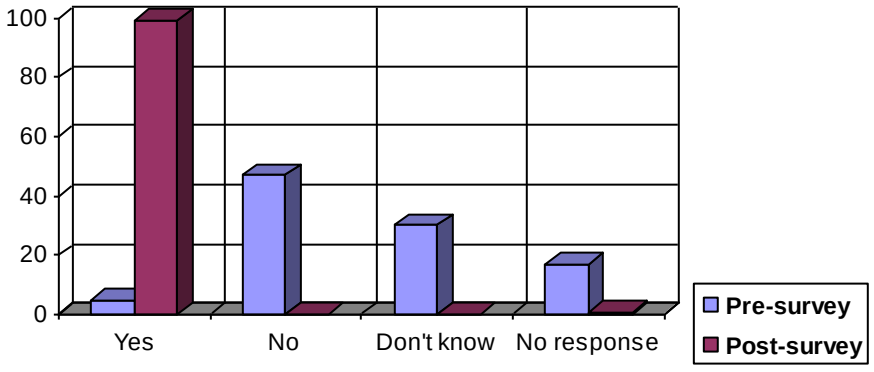
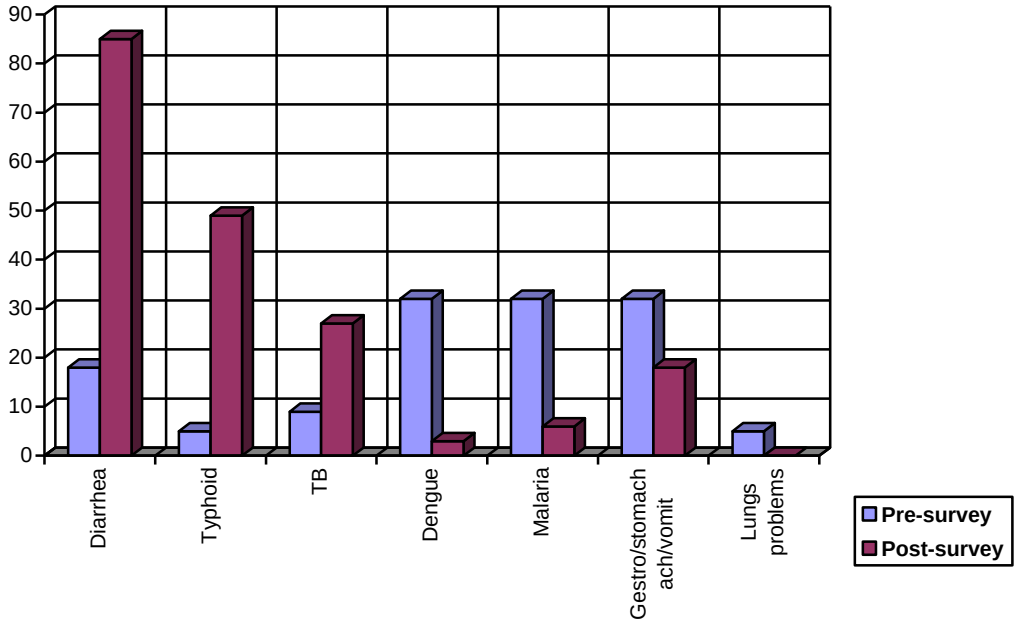


Table – 50b
Illness Cause by Un-safe Drinking Water

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Diarrhea	2	20	2	17	4	18	120	86	215	85	335	85
Typhoid	1	10	0	0	1	5	80	57	115	45	195	49
TB	1	10	1	8	2	9	59	42	49	19	108	27
Dengue	2	20	5	42	7	32	7	5	6	2	13	3
Malaria	2	20	3	25	5	32	10	7	13	5	23	6
Gastro/stomach/vomit	3	30	4	33	7	32	55	39	18	7	73	18
Lungs problems	1	10	0	0	1	5	0	0	1	0	1	0
Base	**10**	**100**	**12**	**100**	**22**	**100**	**140**	**100**	**254**	**100**	**394**	**100**

*multiple response

Figure-22
Type of Illness Cause by Un-safe Drinking Water



An extensive increase was found in knowledge about the causes of illness and the illness caused by un-safe water.

4.5.5 Information Sharing on Importance of Water Conservation and Management

Students were also asked if they had ever heard/watched any public information prgramme on TV/radio or if anyone had discussed the importance of water conservation and management with them.?

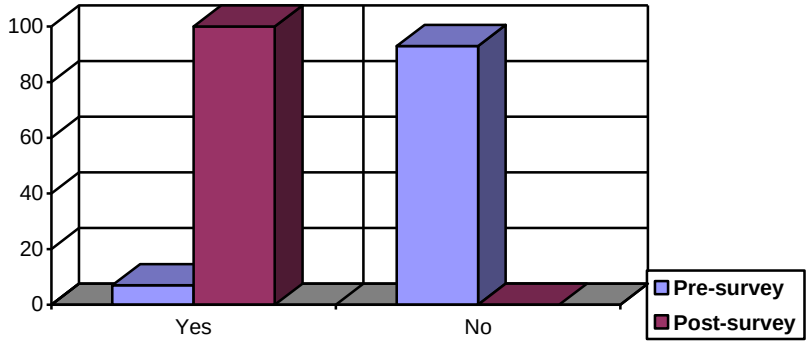
All students mentioned that they had been given the information on importance of water conservation and better management practices through a lecture/presentation, activities on water (debate, game and prizes) by Hisaar Foundation school activation programme.

Very few students reported that they had gained information from other sources than Hisaar Foundation school activation programme. Other sources of information reported were that of TV, school/books (in SST and science subjects), internet and the parents had shared the importance of water conservation with them.

Table – 51
Sharing of Information on Water Conservation and Better Management

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Yes	13	9	15	6	28	7	141	100	259	100	400	100
No	128	91	244	94	372	93	0	0	0	0	0	0
Total	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

Figure-23
Information Sharing on Water Conservation & Better Management



A majority of the students were also able to give a response on the importance of water conversation and better management. Their responses were as under:

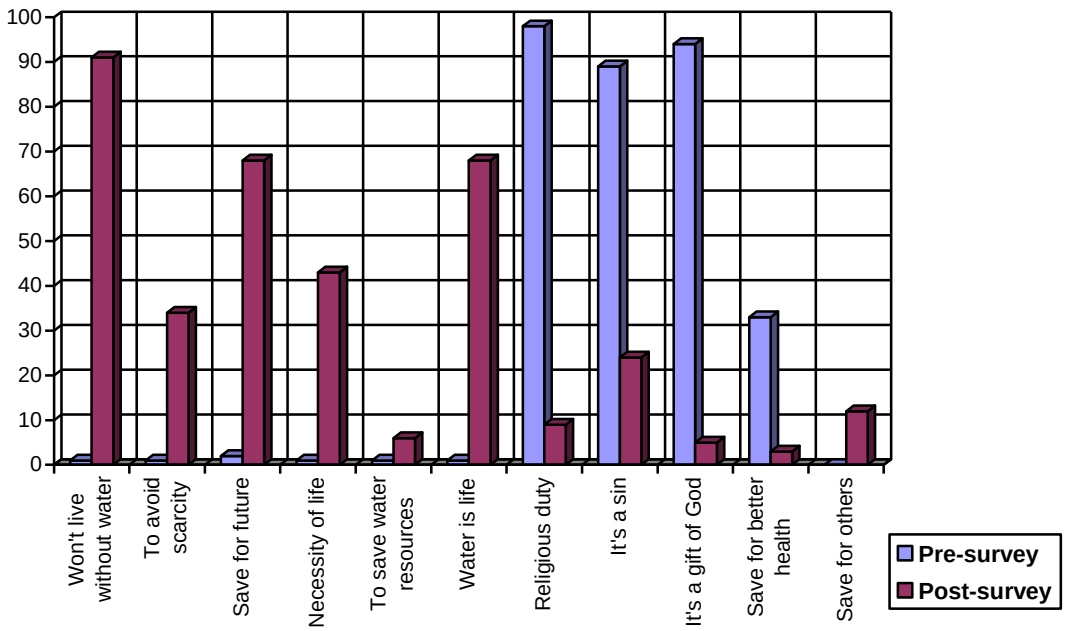
- We won't live without water or no water no life
- Save water for future
- Water is our life
- Water is basic need of our life
- To avoid scarcity in future
- Save water for other living things (agriculture and animals)
- It is a sin to waste water

Table – 52
Importance of Water Conservation and Better Management in Daily Life

	Pre-Survey						Post-Survey					
	Boys		Girls		Total		Boys		Girls		Total	
	N	%	N	%	N	%	N	%	N	%	N	%
Won't live without water/ no water no life	2	1	1	1	3	1	110	78	256	99	366	91
To avoid scarcity	3	2	0	0	3	1	55	39	82	32	137	34
Save for future	5	3	2	1	8	2	93	66	180	69	273	68
Necessity of life	2	1	1	1	3	1	78	55	96	37	174	43
To save water resources	1	1	1	1	2	1	25	18	0	0	25	6
Water is life	1	1	1	1	2	1	96	68	178	69	274	68
Religious duty	141	100	250	97	391	98	35	25	0	0	35	9
Wasting water is a sin	130	92	228	88	358	89	45	32	50	19	95	24
Water is the gift of God	140	99	236	91	376	94	20	14	0	0	20	5
Save for better health	50	35	84	32	134	33	3	2	10	4	13	3
Save for other living things (for cultivation/animals)	0	0	0	0	0	0	20	14	30	12	50	12
Base	**141**	**100**	**259**	**100**	**400**	**100**	**141**	**100**	**259**	**100**	**400**	**100**

*multiple response

Figure-24
Improtance of Water Conservation and Better Management



A great increase was found in information gained regarding importance of water conservation and better management. A significant improvement in the source of obtaining the information from Hisaar Foundation was seen in the post-survey.

A majority of students appeared very well aware about the importance of water conservation and better management, education and information being given to students which has a positive impact on their mindset.

SECTION FIVE

Conclusions

This section will highlight the main conclusions drawn from merging the three main sources of information detailed above: the teachers, the students and the observation team themselves.

5.1 Drinking Water Facilities

Drinking water facilities are severely lacking in half of the schools, and where they do exist (as in the case of water tank with broken taps or no water source and electric water coolers), they are not in any state of functionality. The three main reasons that have rendered the so-called facilities unusable are the lack of a clean water source, broken amenities and debilitating infrastructure, and an unclean environment to say the least (e.g. waste thrown in water tank and water cooler installed outside toilets).

Hence, most students rely on bringing water from home, which it must be noted does not guarantee safe water consumption. As an alternative, the girls bring water from home, whereas the boys have to venture outside to get water. Both methods are insanitary as the study has shown that water from these alternate sources is not clean or safe for consumption in most cases.

In keeping with hard facts, the study has revealed that only 16 percent (filter and mineral water) of the respondents are consuming water that is both safe and clean, even though a much larger percentage wrongly believes so. Thus it is concluded that, not only drinking water facilities are lacking, but the water that the majority is consuming (whether it's from home, a hotel or school water cooler etc) is unfit for consumption and is likely to lead to the spread of water-borne diseases and an unhealthy environment that is definitely not conducive to education.

5.2 Toilet Facilities

Usable toilet facilities are completely absent for both the boys and girls schools. While the rooms for toilets are built, the most popular reasons cited for the non-functioning toilets were the lack of running water, unsanitary conditions, and broken amenities. The toilets had also become breeding grounds for disease as piles of feces had collected, due to lack of water supply and lack of sanitation worker. Further, the girls (secondary school) especially suffered from a major sanitation issue as their toilets had no facility to dispose sanitary napkins, lacked in assistance, and thus made them miserable during their menstruation days

Hence, due to a complete lack of toilet facilities in the schools, the boys either went home or ventured outside (mosque, back lane and house etc) to use the toilet while the girls relied on using toilets at home. Although, the girls used the schools toilet facilities (in the form of a teachers' toilet) more than the boys, all of them cited unsanitary conditions as a major problem.

5.3 Water Conservation and Better Management Practices

Major Use of Water and its Wastage

A positive change is seen in the post-survey data analysis as the unnecessary usage of water is minimized for most of the daily tasks. There is a great decrease of water usage in the post-survey especially for washing of verandas, cleaning of house, watering of plants, lawns and playground and also toilet flushing. The proportion of students that reported water use for bathing, brushing and toilet flushing also decreased in post-survey. This decrease was more prominent among boys as compared to girls.

There is a drastic increase found in the post-survey regarding the judgment of the ways through which water is wasted in their surroundings. While in the pre-survey people did not observe this major issue of wasting water at their houses. Regarding the wastage of water, there are more ways mentioned in post-surveys as compared to pre-survey. Due to school activation programme all the respondents (school heads/teachers and students) are now well informed on the importance of water conversation and management as a majority of respondents reported well observed answers. All the respondents accepted that water is wasted in their daily life through leaking taps, over flowing tanks/running taps/hose while working, long bathing, broken pipelines, leaking joints/pipes, unnecessary toilet flushing and water plants.

So it is concluded that awareness as well as practice of conservation and better management of water is on the increase amongst school teachers/heads and students.

Water Saving Measures

For Toilets

As compared to the findings of pre-survey, the knowledge and practices regarding water saving measures in toilets increased greatly. All of the present respondents mentioned several water saving techniques (e.g. turn off tap/shower while brushing/ soaping, take shorter shower or take shower instead of using bucket, use of washing machine only with full load) . On the other hand, at the time of pre-survey, a majority of the respondents had given very simple answers which were not specific e.g. try to use less water and work under slow tap etc.

Several water saving measure practices for toilets were reported in the post-surveys, while in the pre-survey students mentioned only few measures to save water in toilets. So we can conclude that a marked improvement has been made through the school water conservation and better management activation programme, amongst students.

For Kitchen

A majority of respondents reported several water saving practices for the kitchen such as turning off taps while soaping dishes and reusing the rinsing water for plants or in toilet flushing, reusing of rinsing water for vegetables and fruits to water plants, collecting the rinsing water for vegetables and fruits in a bucket and washing utensils in a tub.

It is concluded that the knowledge of water saving measures and practices for kitchen are found to have increased in post-survey as compared to pre-survey, which shows a great

change and improvement in their water usage habits and behaviour for sustainability of existing water resources.

For Washing Porch and Watering Plants/Lawns

The knowledge about the water conservation practices for washing verandas/porch and watering plants/lawns also confirmed a significant increase was seen in the post survey regarding the practice of water saving techniques. A large majority mentioned mopping of verandas, planting of drought resistance plants/shrubs, reusing the AC water for watering plants, using low-flow faucet/valves for water plants and watering of plants in the cooler part of the day and watering the plants only when needed in the post-survey.

It is concluded that awareness as well as practice of water conservation is appeared to have improved greatly from the pre-survey data as more respondents reported reuse and recycling of water and other important techniques.

Impact of Polluted Water on Children's Health

An extensive increase is found in knowledge about the causes of illness and the illness caused by un-safe water.

The knowledge about the main causes of illness in children is found drastically increased (84 percent) in post-survey. However the percentage of respondents reporting about the knowledge of illness cause by un-safe drinking water is also found to have increased (63 percent) in post-survey. It is concluded that awareness about both causes and type of illness cause by un-safe drinking water is on the increase amongst the target population.

Information Sharing on Importance of Water Conservation and Management

Knowledge about the importance of water conservation and better management in daily life is found greatly improved through a lecture/presentation in their schools by Hisaar Foundation under school activation programme. All school heads/teachers and students who received knowledge about the importance of water conservation and better management, felt it was important to save water for the future, that water is essential for survival, water is life, and to save water resources and water is a basic need of life.

The findings present an encouraging picture of school heads/teachers and students knowledge regarding the importance of water conservation and better management. An overall increase in the knowledge also indicates the success of Hisaar Foundation's school activation programme.

A majority of students appeared to be very well aware about the importance of water conservation and better management in the post survey. This bears testament to the education and information presented to the students by the Hisaar Foundation which has had a positive impact on their mindset.

So it is concluded that the awareness raising interventions on water conservation and better management in schools and the positive role of teachers/heads in sensitizing the children on improved water conservation and management practices have played an effective role on both teachers and students.

5.4 General Environment and Cleanliness

General school environment related issues show certain changes in post-survey in the practices about sanitation and hygiene. An improvement in knowledge and attitude regarding the cleanliness is clearly seen from the above findings, collection of garbage by themselves, cleaning on their own accord and hiring of sanitation worker with their own resources are reported more frequently.

Whereas the problems regarding water, sanitation and also the lack of sanitation worker in the schools cannot be solved just by the heads, teachers and students, the issue of solid waste management and general cleanliness is one that should be proactively undertaken by the heads of the schools. It is appalling to see the state of the classrooms, alleys, and compound in terms of the accumulation of rubbish and the layers of dust in the classrooms.

5.5 Final Remarks

The difference in the responses between the pre survey and the post survey show a clear understanding of the importance of water conservation and better management. The school heads/teachers and children appear to have a deeper understanding regarding water quality, sources of drinking water, water utilization, usage of water in toilets, kitchens, washing verandas and porches etc. The respondents also appear to have gained awareness regarding hygiene and cleanliness in the post survey.

Whereas a positive change is clearly visible in the post survey in terms of personal habits of the respondents in the utilization of water, especially in their homes and in their knowledge of the importance of water and more judicious water management. However, this cannot be seen in the utilization of toilets and water in schools. This is primarily because the condition of the toilets and drinking water facilities in school is abysmal and in grave need of repair and maintenance. The drinking water and sanitation facilities are rendered unusable and useless due to the complete lack of maintenance and incomplete structures.

Similarly, solid waste disposal and management is another serious issue in schools which cannot be tackled by the heads/teachers alone. Although it is appreciable and encouraging to note that the school heads/teachers took it upon themselves to clean the schools and/or hire sanitation workers and sweepers using their personal resources, the responsibility ultimately lies with the government and education departments. It is their primary role and responsibility to see to it that the basic sanitation and drinking water facilities are in functioning and usable conditions.

Annex – 1 Survey Tools

School Audit Form

S.No: _____
File Ref: _____

BASIC SCHOOL INFORMATION

S.No.	Description	Details	
1.	Name of School		
2.	No. of Shifts (Morning / Evening)		
3.	Location of School		
4.	Union Council No.		
5.	Govt. / Private School		
6.	No. of Girl Students		
7.	No. of Boy Students		
8.	No. of Girls / Boys (Mixed)		
	Total		
9.	No. of Teachers		
10.	No. of Classes		
11.	Name of School Principal	Name	Phone/Cell
12.	Name of Contact Person for Rehabilitation work	Name	Phone/Cell
13.	Brief History of School / Background		
14.	Does the School have a Watchman (Chowkidar)? Yes / No		
15.	Does the School have a Sweeper? Yes / No		

	School Renovation Work	Nature of Repair / Renovation Work		
		Item(s) Available	Item(s) Required	Remarks
1.	**BATHROOM**			
1.1	No. of Bathrooms for students			
1.2	No. of Bathrooms for Staff			
1.3	WC			
1.4	Tap			
1.5	Wash Basin			
1.6	Electric Connections			
1.7	Distempering of Bathroom Walls			
1.8	Painting of Bathroom Doors			
1.9	Repair / Replacement of Bathroom Doors			
1.10	Repair / Replacement of Bathroom Windows			
1.11	Any Other Work?			
2.	**WATER**			
2.1	Source of Water Supply			
2.2	Water Supply in Bathrooms			
2.3	Water Pipeline Connections in Bathroom			

BASIC SCHOOL INFORMATION				
S.No.	**School Renovation Work**	**Nature of Repair / Renovation Work**		
		Item(s) Available	Item(s) Required	Remarks
2.5	Water Tank (Overhead)			
2.6	Drinking Water Tank (Overhead)			
2.7	Drinking Water Tank (Underground)			
2.8	Water Pipeline Connections			
2.9	Water Cooler for Drinking			
2.10	Condition of Water (Clean / Unclean)			
2.11	Any Other Water Problems?			
3.	**WATER MOTOR PUMP**			
3.1	Water Motor Make & Type			
3.2	Water Motor Pump (Working / Not Working			
3.3	Any Other Water Motor Pump Problem?			
4.	**SANITATION**			
4.1	Sewerage Pipe / System			
4.2	Drainage Pipe / System			
4.3	Sewerage Waste Water Disposal			
4.4	Septic Tank			
4.5	Any Other Sanitation Work?			
5.	**DESCRIPTION OF RENOVATION WORK**	**TO BE FILLED BY HISAAR FOUNDATION**		
5.1	Name of Contractor			
5.2	Name of Contractor's Firm / Company			
5.3	Contact Details of Contractor	Phone No.	Cell No.	
5.4	Contractor Hired By			
5.5	Date of Submission of Estimate			
5.6	Approximate Estimate (for One School)			
5.7	Date of Commencement of Renovation Work			
5.8	Date of Completion of Renovation Work			
5.9	Work Order No. with Date			
5.10	Advance Amount Paid to Contractor			
5.11	Date of Advance Payment			
5.12	Remaining / Balance Amount Paid to Contractor			
5.13	Total Amount Paid to Contractor with Date			
5.14	Mode of Payment to Contractor (Cheque / Cash)			
5.15	Renovation Work Monitored By			
5.16	Any Other Point to be Mentioned			
6.	**ACTION BY SCHOOL**			
6.1	Submission of Undertaking (as per Format)			
6.2	Submission of Completion Certificate			
6.3	Name of Teacher Deputed for Awareness Raising	Name:		

Signature	**Signature**	**Note / Remarks (if any)**
Programme Manager Hisaar Foundation Date:	School Principal Date:	

School Observation Sheet

Drinking Water Facility:

1. Facility of drinking water located inside the school compound (please tick ✓ only one yes or no)

Yes ☐ No ☐

If yes (tick ✓ one or more):

Used by students ☐
Used by teachers ☐
Used by support staff ☐

2. Type of drinking water facility available inside school?
(*observe and* tick ✓ one or more sources)

Piped water	☐	Hand pump	☐
Water tank	☐	Boring	☐

3. Is the available drinking water facility functional?

Yes ☐ No ☐

4. If no, what are the other sources of obtaining drinking water? (suggestions include; donkey cart, mosque, neighbourhood and home)

5. Any filter/purification system available? Yes ☐ No ☐

If yes what:

Chlorine	☐	Alum	☐
Bleach	☐	Electric filter	☐
Others	☐		

6. How many children did you observe drinking water?
No of children:_____

Sanitation Facility:

1. Toilet located inside school compound (please tick ✓ only one yes or no)

Yes ☐ No ☐

If yes (tick ✓ one or more):

Used by students ☐
Used by teachers ☐
Used by support staff ☐

Amenities in toilets (tick ✓ one or more):

Flush systems	☐
Pan	☐
WC	☐
Tap	☐
Washbasin	☐
Lota	☐

2. Is the available toilet functional (tick ✓ one):

Yes ☐ No ☐

3. If no toilet, what are the other toilet facilities available?

4. Is water available in the toilet? Yes ☐ No ☐

If yes how (tick ✓ one or more):

Tap	☐
Bucket	☐
Water can	☐
Water tank	☐

Other (specify) _____

5. Is the toilet clean?

Yes ☐ No ☐

Explain (tick ✓ one or more):

6. Observation of drainage system *(tick ✓if available)*

Open drainage channels available inside the school	☐
Covered drainage channels available inside the school	☐
Drainage pipe	☐
Connection with a lane drain	☐

7. Observation of garbage disposal *(tick ✓if available)*

Designated place for garbage disposal outside school	☐
Dustbins located inside classrooms.	☐
Covered dustbins inside the school compound	☐
Thrown in the corner	☐
Garbage collection system	☐
Use of plastic bags	☐

Others (specify) _____

Questionnaire for Teachers and Heads

Name of school: _____

Name of teacher/head:_____

Designation:_____

In school since:_____

Drinking Water Facility:

1. Is there a drinking water facility available?

Yes ☐ No ☐

1(a). If so, what type?_____

2. Do you have a regular water supply?

Yes ☐ No ☐

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:----------

3. Is the available drinking water clean and safe to use

Yes ☐ No ☐

If no, explain:_____

4. Is the available facility functioning?

Yes ☐ No ☐

If no, why? _____

6. How many children or teacher/other staff members used the water facility?

No. of Children_____
No. of Teacher _____
No of Other staff _____

7. How often do you use this facility in a day?

8. Is the source of drinking water and water for toilets the same or different?

Same ☐ Different ☐ (specify)_____

9. What needs to be done to improve the available facility?

Sanitation Facility:

10. Are there any sanitation facilities available?

11. Are the available sanitation facilities in working condition?

Yes ☐ No ☐

if no, why not?

12. What alternative is provided if sanitation facilities are not present?

Solid Waste Management:

13. How is solid waste collected?

If collected, who collects it?
If no, how and where do you dispose of it?

General:

14. Has anyone been approached to solve the problems regarding water, sanitation and solid waste management?

Yes ☐ No ☐

If yes, then who?
If no, why not?

15. Is the existing system effective?

16. What measures do you think need to be taken for improvement?

Water Conservation and Better Management Practices:

17. For what purposes do you usually use water in your household/school?

Drinking	
Cooking	
Washing cloths/utensils	
Bathing	
Brushing	
Toilet flushing	
Watering plants/lawn	
Water playground	
Washing verandas/ house	
Clean of house/school	
Watering animals	
Washing vehicles	
Others (specify)	

18. For what purpose do you use water the most?

Drinking	
Cooking	
Washing cloths/utensils	
Bathing	
Brushing	
Toilet flushing	
Watering plants/lawn	
Water playground	
Washing verandas/ house	
Clean of house/school	
Watering animals	
Washing vehicles	
Others (specify)	

19. In your opinion how do we waste water in our households/schools?

Leaking taps	
Leaking pipes/joints	
Leaking toilet cistern	
Unnecessary toilet flushing	
Unnecessary watering plants	
Others (specify)	

20. What water saving measures do you use in toilets?

21. What water saving measures do you use in kitchen/canteen?

22. What water saving measures do you use while washing porch and watering plants/lawns?

23. Do you know the major cause of illness for most of the children in Pakistan?

Yes ☐ No ☐

If yes what are the causes of illness?

Polluted water	
Improper sanitation	
Others (specify)	

24. Do you know the type of illness in children due to un-safe drinking water in Pakistan?

Yes ☐ No ☐

If yes what are these illness?

Diarrhea	
Typhoid	
TB	
Other (specify)	

25. Have you ever heard/watched any public information prgramme on TV/radio or anyone discussed the importance of water conservation and management with you?

Yes ☐ No ☐

If yes who and what?

26. In your opinion what is the importance of water conservation in your daily life?

Questionnaire for Students

Name of school: _____

Date: _____ Name of data collector:_____

Child Profile:

Name of student: _____ Age: _____

Sex: Male ☐ Female ☐

Class: _____

Drinking Water Facility:

1. Where do you get drinking water?

From school ☐
Bring from home ☐
Other (specify)

2. Is your water clean/safe for drinking?

Yes ☐ No ☐ Don't know ☐

If yes how?
If no, why not?

3. Do you use the water facility available in your school?

Yes ☐ No ☐

If yes what type (tick ✓ one or more):

Tap ☐
Hand pump ☐
Water tank ☐
Water cooler ☐
Other (specify)

If no, why not? Give reasons

4. Existing water facility is in working condition

Yes ☐ No ☐ Don't know ☐

If no why not (give reasons)?

Sanitation Facility:

5. Where do you go for toilet?

Toilet within school compound ☐
Mosque ☐
Public toilet outside school ☐
Back lane ☐
Open space ☐
Home ☐
Other (specify) _____

6. Do you use the toilet facility available in your school?

Yes ☐ No ☐

If no why not (give reasons)?

7. Existing toilet facility is in working condition?

Yes ☐ No ☐ Don't know ☐

If no why not (give reasons)

8. Is the available toilet facility in your school clean?

Yes ☐ No ☐

If no why not?

9. Is the water facility available in the toilet?

Yes ☐ No ☐

If yes, how:
Tap ☐
Bucket/can ☐
Washbasin ☐
Water tank ☐
Other (specify) _____

10. How is garbage collected?

Inside the class room: _____
Oust side the class room: _____
Outside the school: _____

Water Conservation and Better Management Practices:

11. For what purposes do you usually use water in your household/school?

Drinking	
Cooking	
Washing cloths/utensils	
Bathing	
Brushing	
Toilet flushing	
Watering plants/lawn	
Water playground	
Washing verandas/ house	
Clean of house/school	
Watering animals	
Washing vehicles	
Others (specify)	

12. For what purpose do you use water the most?

Drinking	
Cooking	
Washing cloths/utensils	
Bathing	
Brushing	
Toilet flushing	
Watering plants/lawn	
Water playground	
Washing verandas/ house	
Clean of house/school	
Watering animals	
Washing vehicles	
Others (specify)	

13. In your opinion how do we waste water in our households/schools?

Leaking taps	
Leaking pipes/joints	
Leaking toilet cistern	
Unnecessary toilet flushing	
Unnecessary watering plants	

Others (specify)	

14. What water saving measures do you use in toilets?

15. What water saving measures do you use in kitchen/canteen?

16. What water saving measures do you use while washing porch and watering plants/lawns?

17. Do you know the major cause of illness for most of the children in Pakistan?

Yes ☐ No ☐

If yes what are the causes of illness?

Polluted water	
Improper sanitation	
Others (specify)	

18. Do you know the type of illness in children due to un-safe drinking water in Pakistan?

Yes ☐ No ☐

If yes what are these illness?

Diarrhea	
Typhoid	
TB	
Other (specify)	

19. Have you ever heard/watched any public information prgramme on TV/radio or anyone discussed the importance of water conservation and management with you?

Yes ☐ No ☐

If yes who and what?

20. In your opinion what is the importance of water conservation in your daily life?