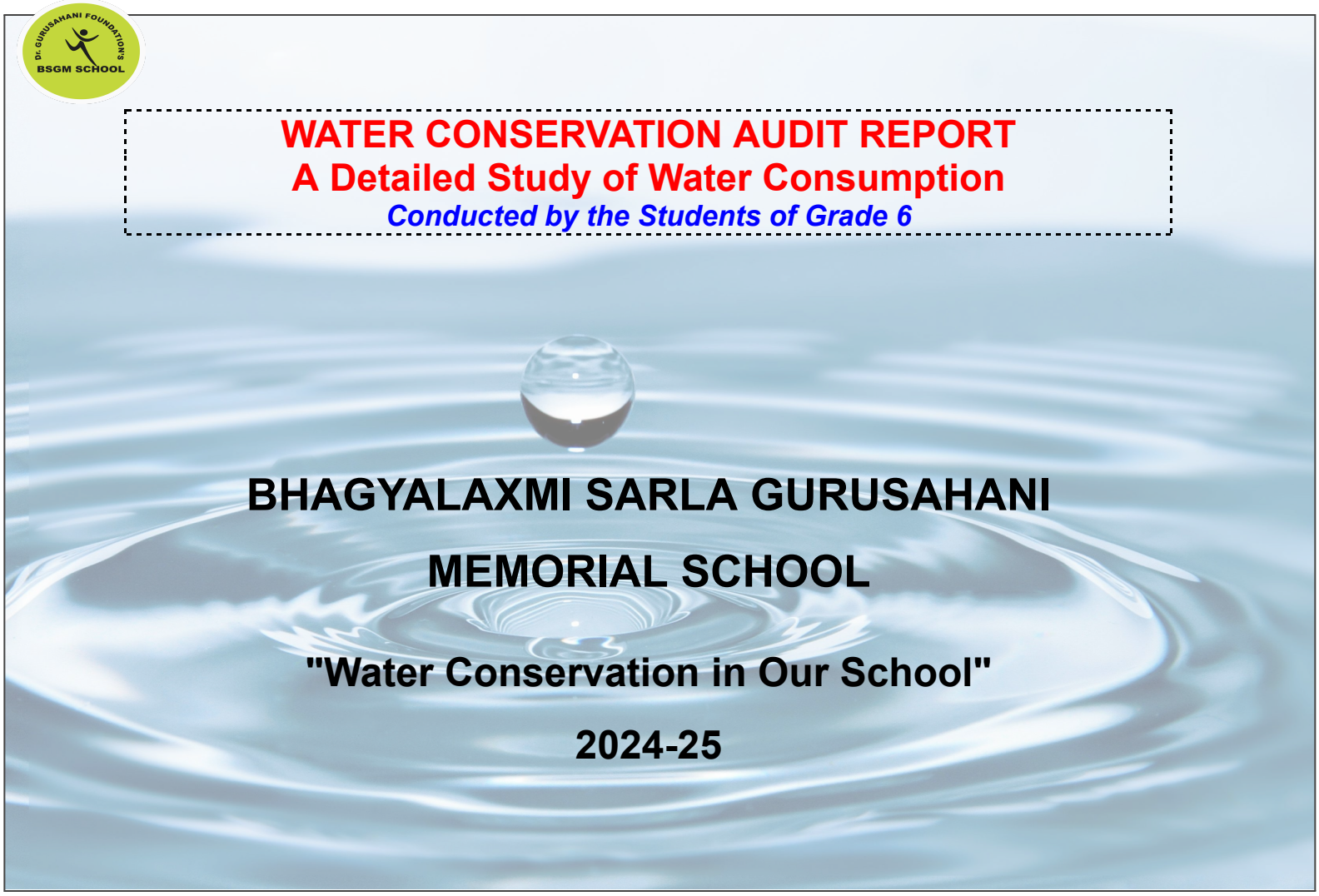
WATER CONSERVATION AUDIT REPORT
A Detailed Study of Water Consumption
Conducted by the Students of Grade 6



BHAGYALAXMI SARLA GURUSAHANI MEMORIAL SCHOOL

"Water Conservation in Our School"

2024-25

Objective:

This report presents the findings of a detailed water consumption school audit conducted by Grade 6 students as part of their Water Conservation project. The report includes data interpretation, analysis, and recommendations for reducing water wastage.

“Every Drop Counts!”

Contents

INTRODUCTION

Water is essential for life, and saving it is important for our planet. Our school understands the need to conserve water and has already taken steps to reduce our water usage. We have set up a rainwater harvesting system that collects rainwater for non-drinking purposes like flushing toilets and watering plants.
We also use tap water for drinking, handwashing, and other basic needs. Furthermore, we know there is more we can do to improve how we use water. This report looks at how much water our school uses, where we can save, and new ways to recycle and reuse water.
Our main objective is:

1. Measure the school's total water usage, including rainwater and tap water.
2. Find ways to improve our rainwater system and store more water.
3. Explore new water-saving methods and habits to reduce tap water use.
4. Create a plan to recycle water and make the most of collected rainwater.
5. Spread awareness among students, teachers, and staff about water conservation and get them involved.

These steps will help us use water more wisely and encourage everyone to take part in the conservation.

By following these steps, we wish to create a system where every drop of water is used wisely. Our goal is to make people aware about water conservation, setting an example for others in our community and encouraging them to take action to protect the environment.

ACKNOWLEDGEMENT

We Would like to express our deepest gratitude to everyone who contributed to the success of this project on water conservation. We sincerely thank the Chairman of the school, **Dr. Hiroo Gursahani,** for his visionary leadership and dedication to holistic education. We would like to thank **Mrs. Preeti Saha Ma'am** our Project guide for her valuable guidance, support and feedback. Our deepest gratitude towards our trustee sir **Dr. Yash Gursahani** for his insights, throughout the project, instrumental in shaping the direction of our research. We are also grateful to our office staff **Mr. Kiran Sagar** and **Mr. Pravin Kulkarni** for guiding us with the Rainwater Harvesting system of our school.
We thank our school - BSGM for providing the necessary resources and environment that enabled the research to progress smoothly.
Special thanks go to students of grade 6 whose collaboration and dedication made this project a success.

WATER RESOURCES AND SOURCES

Water resources are sources of water that are potentially useful for humans. The main sources of water are rain, groundwater, rivers, lakes, streams and natural reservoirs. In school, we also need water for drinking, handwashing, cleaning, and for washrooms. We have studied school water resources. We have a system of rainwater harvesting in our school. All the water which is coming from the roof is drained into a well with the pipes. This system is also called the Rooftop rainwater harvesting system. This water is used for cleaning, washing and in the washrooms.
For drinking purposes, we use the water provided by the municipal corporation supplied from the Jayakwadi dam.

NEED FOR CONSERVATION

Water is a very valuable natural resource. When we thought of running a project, we realized that we should have all the data of water consumption in our school.
We have collected the data from our administrative staff and helpers wherein our calculations brought us to the conclusion that we can save water in school by using some simple methods.
We should save water at school, at home, and in society for our bright future.

SURVEY - WHAT, HOW, DATA AND INFERENCE

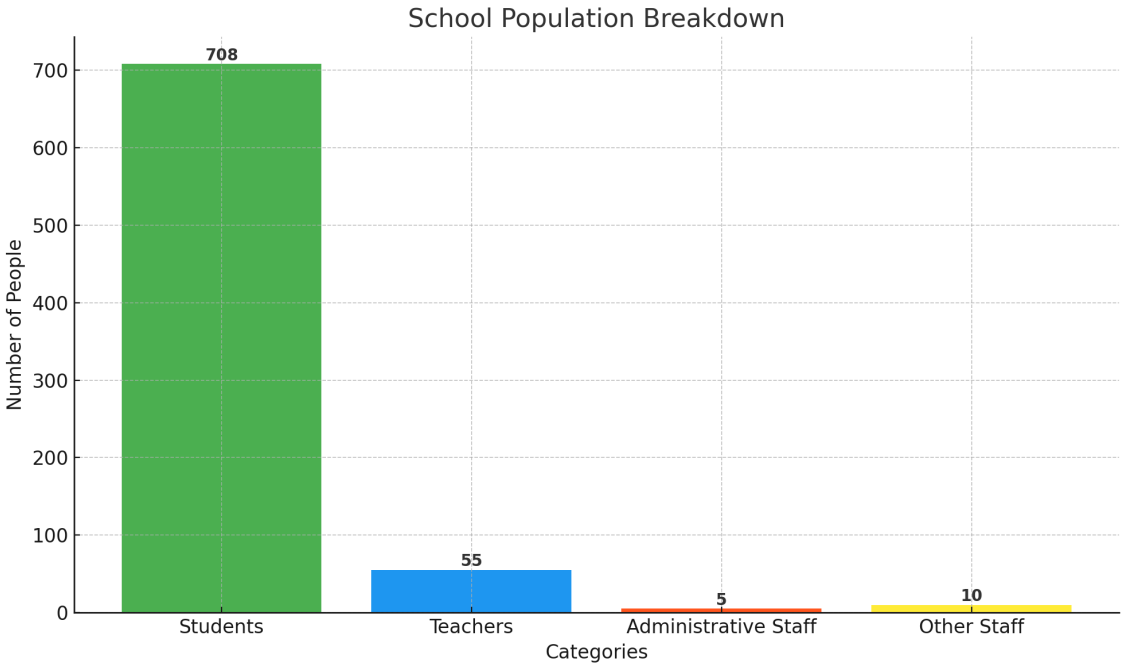
To start our water conservation campaign, it is vital to know how much water the school actually uses for its day to day functioning. The first step is to find out whether the school has a water storage facility. Next step would be to measure the amount used directly from the source. This way we will account for the entire amount used per day and how.
For this we have taken the help of our administration staff.
The following data was collected for our water audit process-

Total strength of our school in BSGM Building				
708 Students	55 Teachers	5 Administrative Staff	10 Other Staff	778 Total Strength

∴ Total consumption per day = 2800 litres
We found per capita consumption by using following formula-

Per capita consumption = Amount of water consumed / Total strength
2800 litres / 778 = 3.59 litres

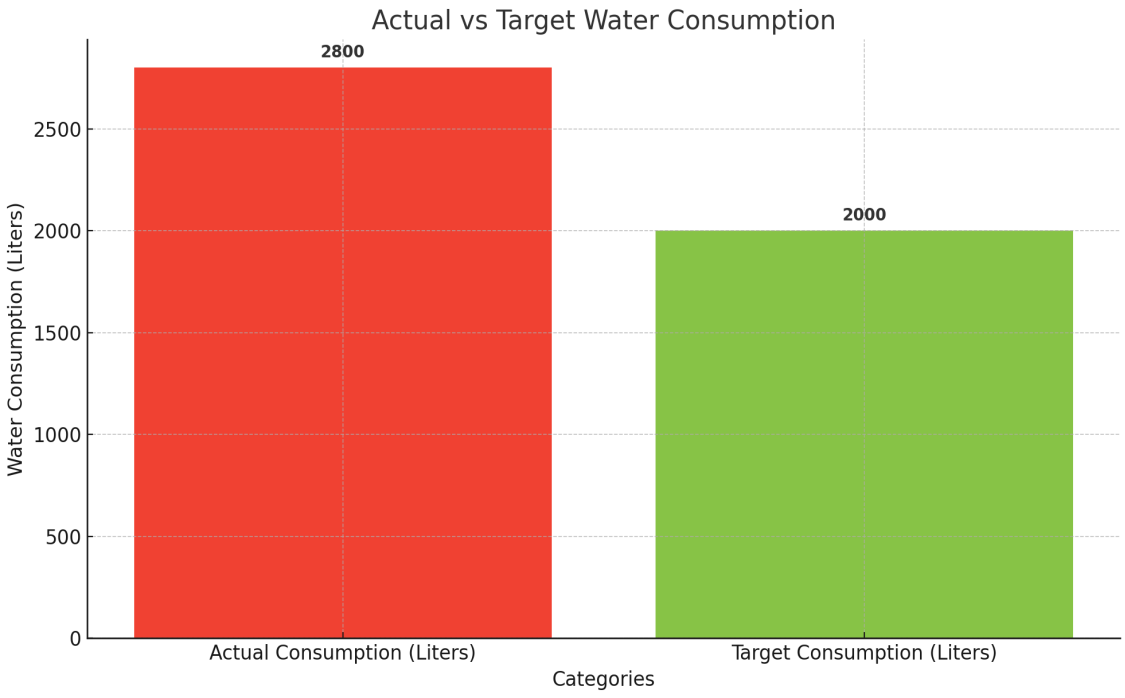
Water Resource - Well (Rain water harvesting) - Water used daily for washing hands and flushing the washroom in BSGM building = 2800 litres. From this calculation, we can say that 3 to 4 litres of water is used by each person in our school.



Here is a bar chart visualizing the population breakdown of our school, including students, teachers, administrative staff, and other staff members.

Here’s a bar chart comparing actual water consumption (2,800 litres per day) versus the target consumption (2,000 litres per day).

USAGE OF DRINKING WATER IN BSGM BUILDING



Water Resource - Jayakwadi Dam

Sr.no.	Floor	Capacity (in litres)	Re-filling per day	Usage (in litres)	Total
1	Sagar	30	2	60	Big tank = 500 litres
2	Sarita	30	2	60	
3	Shikhar	30	2	60	Usage = 360 litres i.e. 72%
4	Shrushti	30	2	60	
5	Surya	30	2	60	Remaining water = 140 litres i.e. 28 %
6	Terrace	20	2	40	
TOTAL	6	180	12	360	

WAYS TO SAVE / RECYCLE / REUSE WATER
SUGGESTIONS BASED ON THE ABOVE-MENTIONED SURVEY

Save Water:

1. Fix leaky outlets and toilets.
2. Turn off the tap while washing hands during recess.
3. Harvest rainwater.
4. Use drought-resistant plants.
5. Monitor water usage.

Recycle Water:

1. Install a grey water system.
2. Use recycled water for irrigation.
3. Treat wastewater for non-potable uses.
4. Implement rainwater harvesting.
5. Use water-efficient appliances.

Reuse Water:

1. Collect water from dehumidifiers for plants.
2. Use grey water for flushing toilets.
3. Create a pond or reservoir for rainwater.

Innovative Solutions from students:

1. Atmospheric water generators.
2. Water-recycling toilets.
3. Fog collectors.

Actions that individuals must take:

1. Take responsibility for water usage.
2. Educate family and friends.
3. Support water-conservation organizations.

WHAT IS RAIN WATER HARVESTING?

Rainwater harvesting is the process of collecting and storing rainwater for later use, rather than allowing it to run off and be wasted. This harvested water can be used for various purposes, including irrigation, drinking (after treatment), and domestic uses like washing and cleaning.
Rain water harvesting is important because,
Conserves Water: Rainwater is a natural, free resource that can reduce the need to tap into existing water supplies like rivers, lakes, or groundwater.

1. **Reduces Pressure on Groundwater**: In areas where groundwater is over-extracted, rainwater harvesting helps replenish underground water reserves, reducing dependency on bore wells.
2. **Prevents Flooding and Soil Erosion**: By capturing rainwater, the risk of flooding and soil erosion is minimized, as less rainwater is allowed to flow unchecked.
3. **Cost-Effective**: Harvesting rainwater can reduce water bills and costs associated with pumping groundwater or purchasing water, making it a cost-effective solution for households and industries.
4. **Provides Backup in Droughts**: Rainwater stored during wet seasons can serve as a reliable backup during dry periods, especially in regions prone to droughts.
5. **Improves Water Quality in Some Areas**: In areas where groundwater is contaminated, rainwater harvesting can provide a cleaner alternative, especially when filtered or treated appropriately.
6. **Sustainable and Eco-friendly**: It's an environmentally friendly method that promotes sustainable water management by reducing reliance on external water sources

Rainwater harvesting is an effective way to address water scarcity, reduce environmental impacts, and promote water security for communities.

TRADITIONAL RAINWATER HARVESTING

The decision whether to store or recharge rainwater depends on the rainfall pattern of a particular region. For example, in places like Kerala and Mizoram, rains are frequent and heavy, barring a few dry periods. In such places, one can depend on small domestic sized water tanks for storing rainwater. But in dry regions like Delhi, Rajasthan and Gujarat, the total rainfall is limited to a month or two in a year. Hence, recharging aquifers to replenish groundwater would be the wiser option.

Methods of harvesting water-

1. Strong rainwater for direct use-

Storage tanks for harvested rainwater can be built both underground or on the surface. In the cities of Gujarat and Rajasthan, where rooftop harvesting was practised traditionally, rainwater from the roof was collected in underground tanks in the courtyard or within the buildings called Tanks, these storage structures would supply drinking water throughout the year. Some are still in use today. In Mizoram, in the North-East, tanks made of galvanized iron, tin or concrete are commonly used to store rainwater for drinking purposes. These were all built on the surface, perched on roofs or mostly beside the hill homes.

2. Groundwater recharge system-

Recharge structures channelise rain water into the aquifer. It is absolutely necessary in context of the rapidly declining groundwater table across India. Recharging also prevents flooding in cities during intense rain spells. In coastal areas, it serves to control saline intrusion.

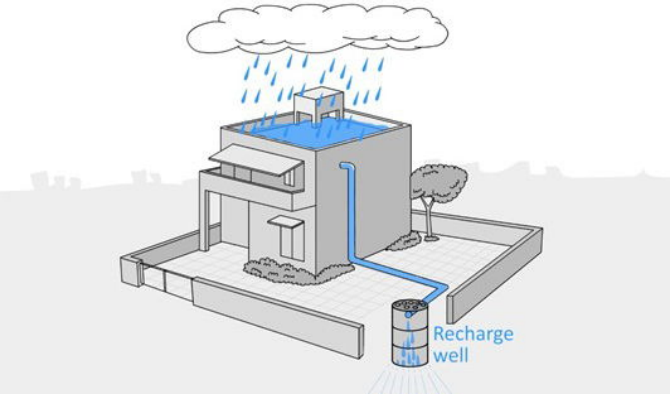
Every region in India has age-old local traditions of rainwater harvesting systems. The type of method or structure used depends on the soil, terrain, geological formations and the rainfall pattern. Using the basic principle of the structure erected, one can evolve new approaches or technologies that are better suited for managing modern-day water needs.

The assignment: Local history of rainwater harvesting practices.
Find out the local traditions of rainwater harvesting sites/towns/cities. This investigation or research will help you to understand the techniques and mechanisms used to match the geographical condition of your region.

A sample format is given below to structure.

1) Type of RWH system used: Simple rain harvesting system
2) Structure of the RWH system: Simple structure with PVC pipes
3) Materials used of the structure: PVC pipes
4) Catchment area of structure:10,000 square feet approximately
5) Population it catered too:1500
6) Present condition of the system: Functioning well
7) Any NGOs involved in maintenance of the structure: No

RAINWATER HARVESTING IN OUR SCHOOL



In our school, we have been using rain water harvesting for the last 10 years. We use water from the well for cleaning, washing, and for flushing the washrooms.

Is the water consumed clean?

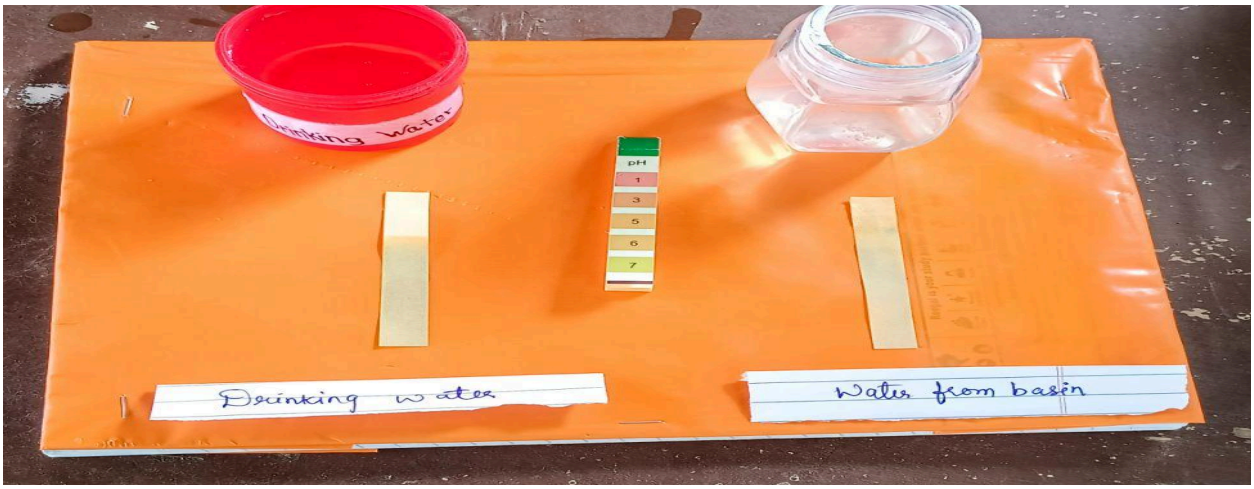
In the above tasks, we have audited the quantity of water consumed in the school.

While water access is a serious issue, assuring that the water is safe for consumption is an even tougher challenge. The parameter of water “quality” is equally significant. Quality refers to the physical, chemical & biological properties of water. The disease burden of poor quality water is backbreaking in our country.

Parameters of standard for water quality are:

pH, biological oxygen demand (BOD), suspended solids (SS), dissolved oxygen (DO)

2 samples of water were collected, one was from a drinking water tap, and another sample was taken from a basin used for washing hands.



The test was conducted for the samples and the pH level was near 7.5.

HOW MUCH WATER DOES OUR SCHOOL RECYCLE / REUSE

Consumption of water per floor = 70 litres

Consumption in entire school = 70*6 = 420 litres

Per floor tank capacity = 200 litres*6 floors = school's water capacity = 1200 litres

To find out the saved water = consumed water / Total water capacity*100

420/1200*100 = 3.5*10 = 35%

Therefore, we save 35% water in a day.

Our conclusion: Saved water can be used the next day. The remaining waste water can be reused or stored for later use. Like watering plants, mopping, etc. as this water is categorized as Grey water.

REF: SITE, BOOKS, ETC.
Water plus booklet.

Students collecting data.....

Students conducting the survey.....

Students writing the report.....

The Team...!

Std VI Mount Everest

Std VI Kanchenjunga

Std VI Yangtzekiang