

Importance of Water Resource Management

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Abstract- Groundwater is a valuable resource both in the united state and throughout the world. Where surface water, such as lakes and rivers, are scare or inaccessible. The volume of ground water in storage is decreasing in many areas of the united states in response to pumping. ground water depletion is primarily caused by sustained groundwater pumping. The water shortage problem is the lack of sufficient available water resources to meet water needs within a region. It affects every region and around 2.8 billion people around the world at least one month out of every year. More than 1.2 billion people lack access to clean drinking water.

India's groundwater depletion is a national crisis. More than half of wells show declining groundwater levels. The challenge is particularly acute in northwestern India, where baseline water stress is extremely high, Water problems involve caused by water shortage, water stress and water crisis . The relatively new concept of water stress is difficulty in obtaining sources of fresh water for use during a period of time, it may result in further depletion of available water resources .Water shortage may caused by climate change, such as altered weather pattern, increased pollution, and increased human demand and overuse of water . The term water crises noted a situation where the available potable unpolluted water within a region is less than that region's demand.

Index Terms- Save water, Rain guage, Rain Water harvesting

I. INTRODUCTION

The water shortage problem can result from two mechanisms. Physical water shortage result from inadequate natural water resources to supply a region demand and economic water shortage problem result of poor management of sufficient available water resources¹. Water is the foundation of life. Still today, all around the world, many people spend their entire day searching for it. Water shortage problem is either the lack of enough water or lack of access to safe water. The problem of water shortage is growing one .As more people put ever increasing demands on limited supplies,even maintain access to water will increase. In some places, it is simply dry. Water is hard to find. Fresh water makes up a very small fraction of all water on the earth². Nearly 70 percent of the world is covered by water, only 2.5 percent of it is fresh. In essence , only 0.007 percent of the planet water is available to fuel and feed its 6.8 billion people.

Water use has grown at more than twice the rate of population increase in the last century. By 2025, an estimated 1.8 billion people will live in areas plagued by problem of water shortage ,with two third of the world's population living in water stressed region as a result of use, growth, and climate change³.

Global warming changing the nature of climate. It effects we can see on the rainfall, therefore water shortage has been increasing all over the world. Many countries will face this problem near about expected year 2025. This problem become dangerous when the surface water pollution will be increase. Another popular opinion is that the amount of available freshwater is decreasing because of climate change. Climate change has caused receding glaciers, reduced stream and river flow, and shrinking lakes and ponds . Water shortage resulted from population size more than rainfall. The challenge we face now is how to effectively conserve , manage, and distribute the water we have. Water conservation encompasses the policies, strategies and activities to manage fresh water as a sustainable resource to protect the environment and to meet current and future human demands, population, household size and growth and affluence all affect how much water is used. Now it is need of time to change the frame of mind and system or redesigne of the modules are important⁴

We have tried to increase awareness about water shortage problem and discussed with society. We found some solution about this problem⁵. The concept of rainwater harvesting as one of the solution to the water crisis To overcome from the problem it is essential to utilize the resource of sustainable water. Several measures have been developed to waste water, save water and reuse it. so to save water through rainwater harvesting process. Rainwater Harvesting refers to the collecting of rainwater, mostly on a roof, from where it flows through gutters in to a collection tank. In other words, it refers to a storage system could be either above or below the ground that collects, stores and distributes runoff of rain or snow from roofs⁵.

II. OBJECTIVES

- 1) To conserve the water
- 2) To meet the increasing demand of water
- 3) To raise the underground water table
- 4) To reduce the run-off which chokes the drains
- 5) To reduce groundwater pollution
- 6) To reduce soil erosion
- 7) Rain gauge provided with accurate information about the rain in monsoon is given to the farmers for planning of usage of water for next farming process.

III. METHODOLOGY

We installed Rain Gauge. It is used to measure rainfall. It is necessary to know the quantity of rainfall every year in our village as the total rainfall is planned for the next farming season

and the proper use of drinking water. It is also helpful to school life, students gain knowledge of the rain fed equipment and how they measure the rainfall so we installed rain gauge equipment at the school. Students took reading of rainfall every 24 hours in the monsoon season and is provided with accurate information about the rain in monsoon is given to the farmers for planning of usage of water for next farming process. In this way the farmers are told

to show the total rainfall in monsoon and to plan accordingly. It is also help to calculation of amount of water recharge nearby bore well through rain water harvesting. In monsoon of year 2018 every day students took reading of rainfall with the help of rain gauge and record the rainfall of every month. In Askheda village of Nashik district(Maharashtra). It was total rain about 504.3 mm.



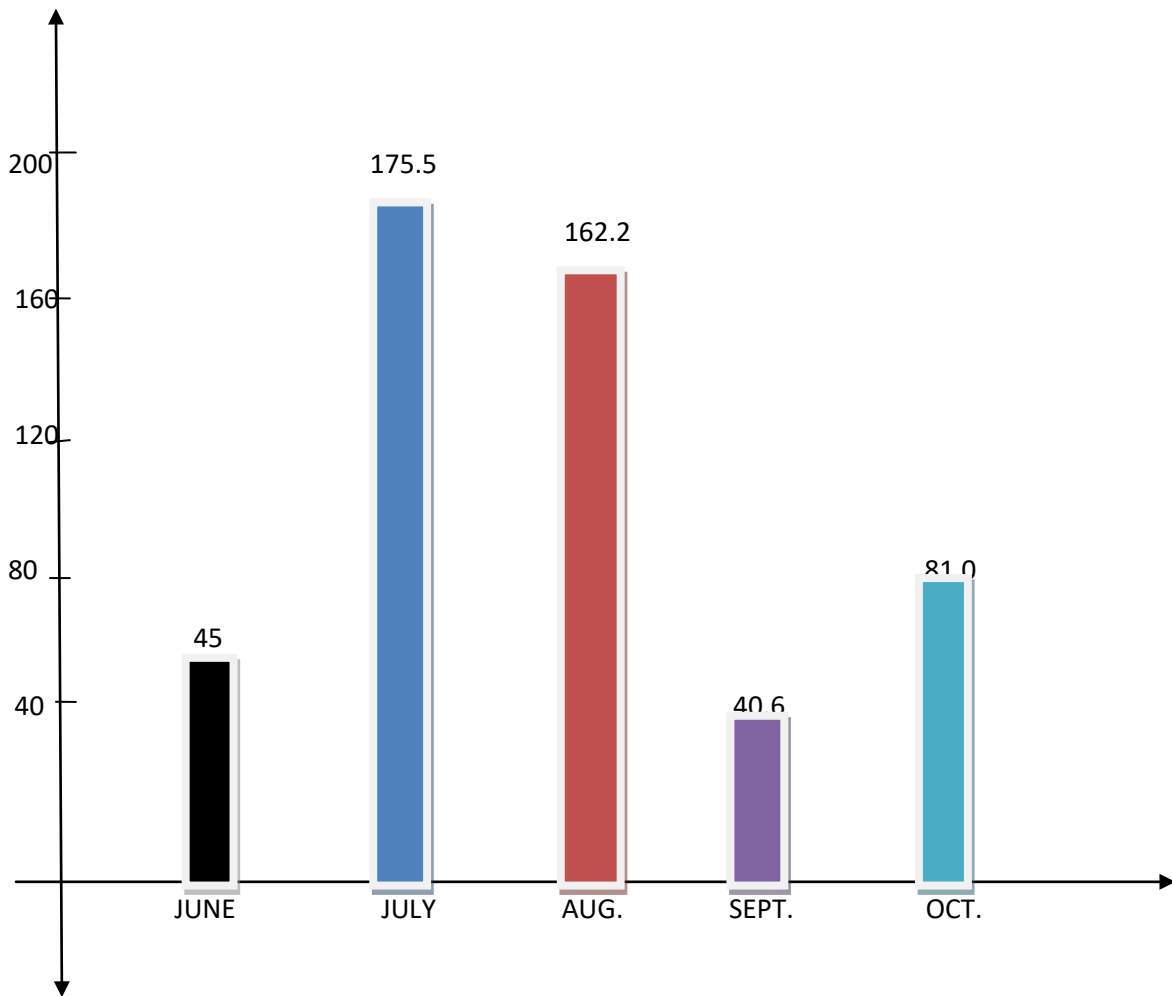
Rain fall in year 2018

Month	June	July	August	Sept.	Oct.	Toatal Rain Fall
Rain fall in mm	45	175.5	162.2	40.6	81.0	504.3

GRAPH SHOWS RAINFALL IN MONTH

SCALE

ON Y AXIS : 1cm = 40mm



The students dug a pit measure of ten by ten foot near the tube well and filled the pit of coal, pieces of brick and sand and left the entire water of the rain fall through the pipeline from the new building roof. students calculate the area of roof in square meter and total water recharge with the help of total rainfall data was calculated by following formula

IV. RAIN WATER HARVESTING & RECHARGING PROJECT

(Area of Roof in meter)X(Average Rain (meter))x(Coefficient of Rain stream)

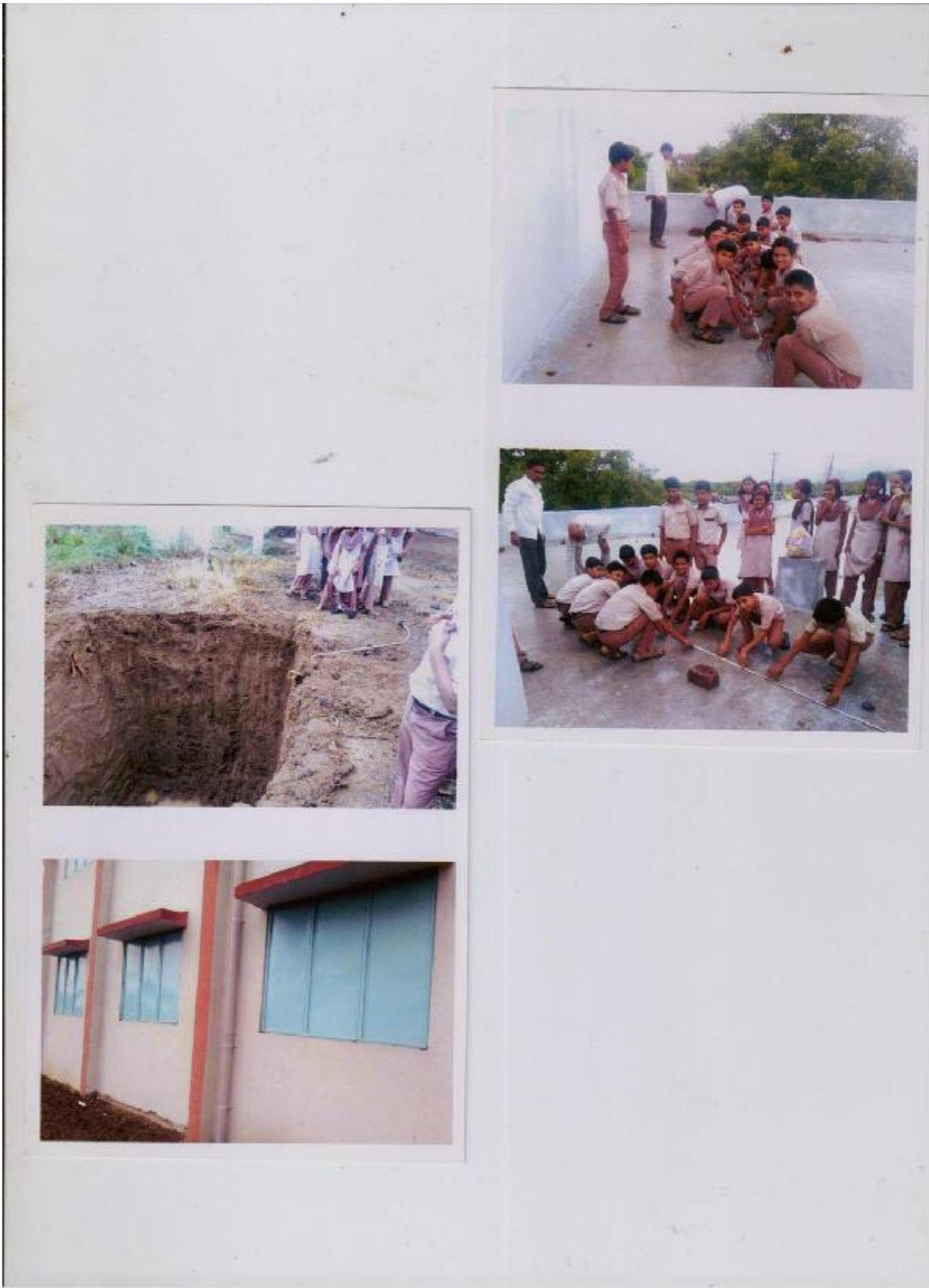
$$269.38 \times 0.5 \times 0.8$$

$$107.8 \text{ cu.m.}$$

$$107800 \text{ lit. (1cum = 1000 lit)}$$

One Lakh seven thousand eight hundred lit. water was accumulated near
Tube well in year 2018

It became helpful to solve Drinking Water problem in Summer season



V. RESULT

- 1) People became alert and aware about ground water depletion
- 2) Students ,youth , People participate themselves in this project
- 3) People became alert and aware about loss of water.
- 4) Rain water harvesting helped to solve Drinking Water problem in Summer season
- 5) People prepared rain water harvesting on roof of their building

VI. CONCLUSION

- 1) It saves the water drinking problem.
- 2) It helps to solved drinking water problem
- 4) Rain water harvesting help to increase water level

VII. SCOPE AND LIMIT

Rain Gauge Instrument is provided with accurate information about the rain in monsoon is given to the farmers for planning for their usage of water for next farming process

Rain water harvesting can be help to solve Drinking water problem in summer season and also help to increase water ground level.

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AUTHORS

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