Govt Degree College,

Community Service Project

Water Problem & Drinking Facility

Submitted

By

Sravani.V

I B.Sc(MPCA)(II Semester)

Register Number:21373047023

Under Mentorship

Of

G.Y.V.Kalyani,

Project Mentor,

Lecturer in Mathematics,

GDC Srisailam.

DECLARATION

I hereby declare that the project entitled "Community service project" submitted by me to Controller of Examinations Govt Degree College, Srisailam Project, Nandyal Dist inpartial fulfilment of the requirement for the award of the Degree of BSc. This is a record of actual projectwork carried out by me under the guidance of G.Y.V.Kalyani Medam Garu, Lecturer in Mathematics. I further declare that the work reported in this project has not submitted and will not be submitted, either in part or in full, for the award of any degree in this institute or any other institute or university.

_____

Name:

Date:

CERTIFICATE

This is to certify that_____studying IB.Sc. MPCA at Govt Degree College, Srisailam Project, Nandyal Dist has successfully completed her community service project on_____under the guidance of G.Y.V.Kalyani Medam Garu, Lecturer in Mathematics .

Signature of Mentor Signature of Examiner Signature of the Principal

ACKNOWLEDGEMENT

I wish to express my gratitude to those who extended their valuable cooperation and contribution towards the project

I would like to thank our Principal Sir Dr .P.Hussain Basha Garu for facilitating the project and providing his guidance throughout the duration of the project.

I would like to express gratitude to my project guide G.Y.V.Kalyani Medam Garu, Lecturer in Mathematics, for her valuable time and continuous assistance for the successful completion of the project.

I would like to thank the faculty and staff of the institute for their support.

GRADE SHEET

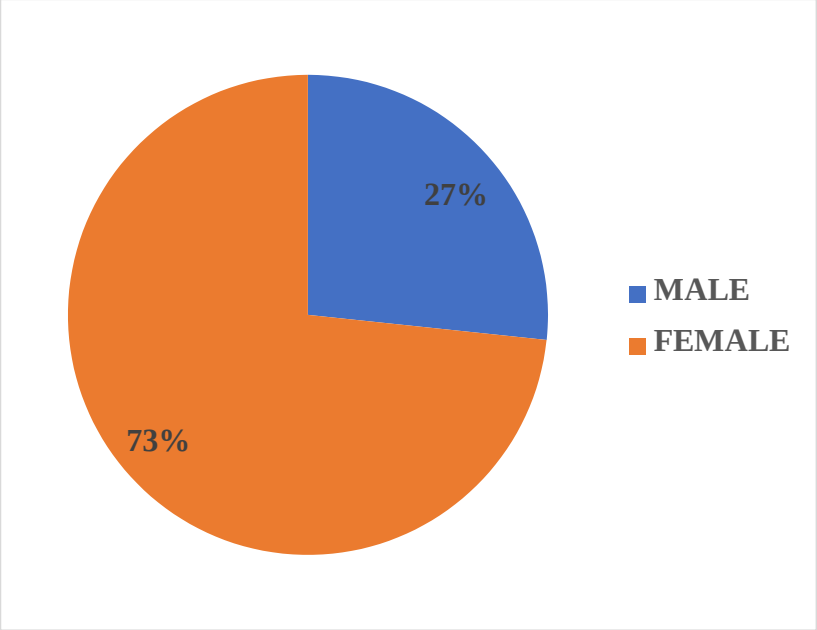
S.No.	Part of work	Marks awarded	
		Max marks	Marks awarded
1.	Awareness on project		
2.	Implementation		
3.	Survey		
4.	Report writing		

SURVEY LOCATION

Location: Ward No-7, Sachivalayam No-03, Eastren Colony, Nandyal Dist.

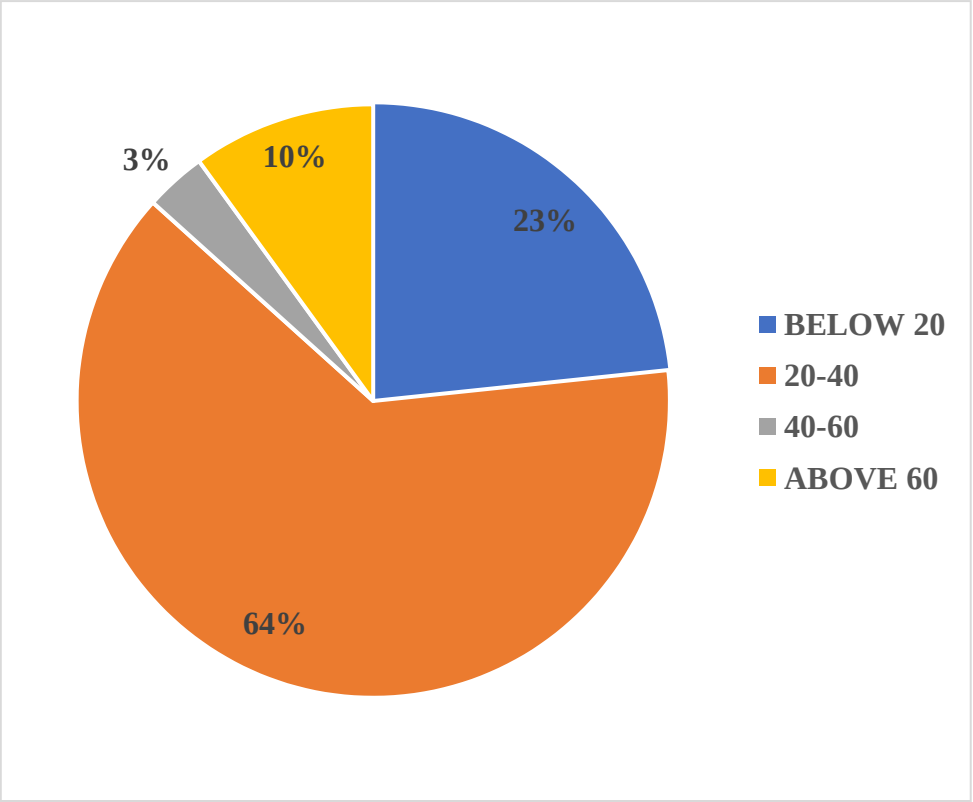
Classification of Respondents based on Gender

GENDER	
MALE	8
FEMALE	22



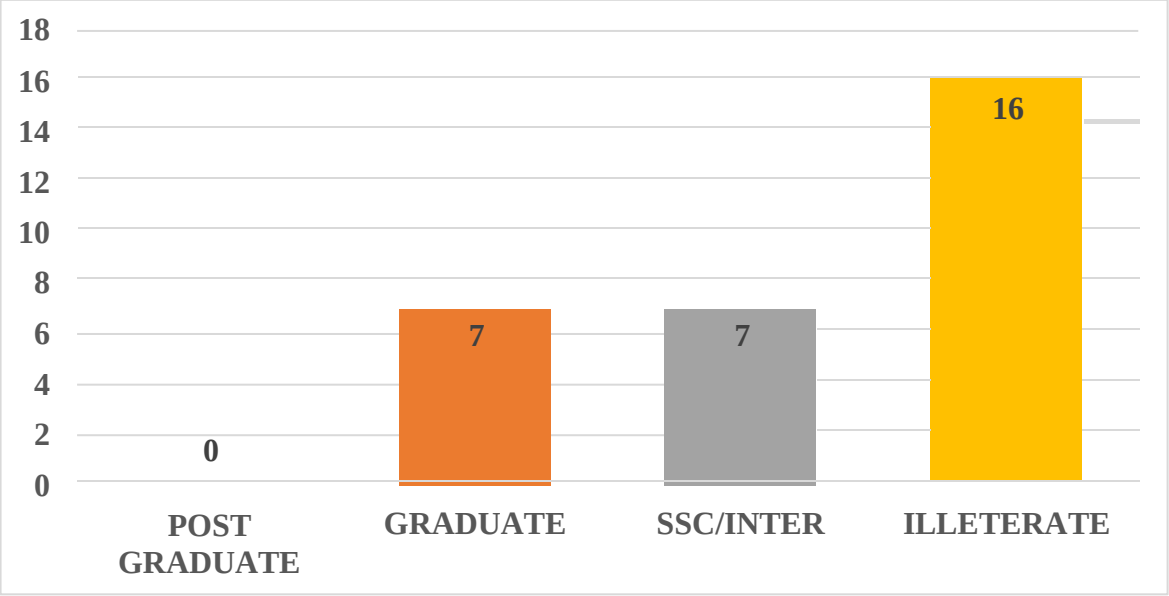
Classification of Respondents based on Age

AGE	
BELOW 20	7
20-40	19
40-60	1
ABOVE 60	3



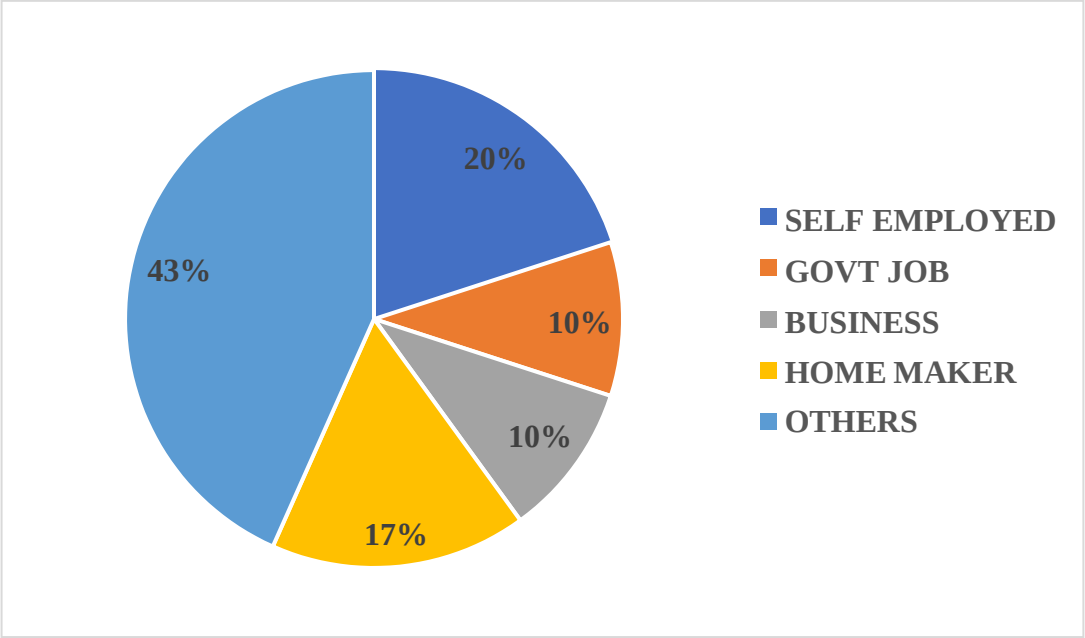
Classification of Respondents based on Education Qualification

EDUCATION QUALIFICATION	
POST GRADUATE	0
GRADUATE	7
SSC/INTER	7
ILLETERATE	16



Classification of Respondents based on Profession

PROFESSION	
SELF EMPLOYED	6
GOVT JOB	3
BUSINESS	3
HOME MAKER	5
OTHERS	13



SURVEY PHOTOS

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OBJECTIVE OF COMMUNITY SERVICE PROJECT

Community service **provides an individual with the opportunity to become active members of the community and has a lasting, positive impact on society at large**. Community service or volunteerism enables individuals to acquire life skills and knowledge, as well as provide a service to those who need it most.

The objective of community service project is that an individual should be able to understand and describe

- The concept of community service
- The social, public and community responsibilities of the professionals
- The types and concept of volunteer work.
- To understand social conditions of the people.
- To know the economic conditions of the people.
- To create awareness among the people regarding the problem identified.
- To carry on a survey and to analyse the current situation.

INTRODUCTION

I have chosen to do Community Service project on the topic **Water Problem & Drinking Facility** in the locality Ward No-7, Sachivalayam No-03, Eastren Colony, Nandyal. I have chosen 30 houses for my project. The area is a mixture of low income and middle class families, very few belong to high income group. It is a residential area and will be moderately busy.

SCOPE OF STUDY

The study has been conducted based on the responses of the selected respondents in Srisailam Project, Nandyala Dist. Hence, the inferences, findings of the analysis need not hold good totally for the Srisailam Project.

The study was limited to the 30 responses of residents in Srisailam Project.

METHODOLOGY

Quantitative research is carried out by interviewing the people. In the first week socio economic survey was carried out and problems were identified. In the second week awareness was brought and suggestions were given regarding the problems identified among the localities. In the third week survey was conducted using questionnaires and in fourth week project report was written.

PROJECT SPECIFICATIONS

TOPIC: WATER PROBLEM & DRINKING FACILITY

ABSTRACT

Water is connected to every forms of life on earth. As a criterion, an adequate, reliable, clean, accessible, acceptable and safe drinking water supply has to be available for various users. Drinking water is a basic requirement for life and a determinant of standard of living. However, besides government efforts, supply and demand side factors of both surface and groundwater determine the level of drinking water available to people. The supply and demand factors increase with the natural and human factors like pollution. This limits drinking water supply provision and raise the delivery cost. Decline in groundwater table and availability of surface water, particularly in summer months, has put large number of people in risk for drinking water. Poor water quality problem has also been observed in more number of habitations. Inadequate resource management and institutional system seems to be the major causes for the present problems. The study observes that activities like operation and maintenance of drinking water supply schemes; water quality monitoring; groundwater conservation and rainwater harvesting measures have to be implemented for better provision of drinking water supply. Further, an integrated institutional system for water quality monitoring and groundwater recharging seems to be necessary.

KEYWORDS

Drinking water, Adequate, Reliable, Ground Water, Pollution, Water Supply

INTRODUCTION

Water (chemical formula H_2O) is an inorganic, transparent, tasteless, odorless, and nearly colorless chemical substance, which is the main constituent of Earth's hydrosphere and the fluids of all known living organisms . It is vital for all known forms of life, even though it provides neither food, energy, nor organic micronutrients. Its chemical formula, H_2O, indicates that each of its molecules contains one oxygen and two hydrogen atoms, connected by covalent bonds. The hydrogen atoms are attached to the oxygen atom at an angle of 104.45°. "Water" is also the name of the liquid state of H_2O at standard temperature and pressure.

A number of natural states of water exist. It forms precipitation in the form of rain and aerosols in the form of fog. Clouds consist of suspended droplets of water and ice, its solid state. When finely divided, crystalline ice may precipitate in the form of snow. The gaseous state of water is steam or water vapor.

Water covers about 71% of the Earth's surface, mostly in seas and oceans (about 96.5%). Small portions of water occur as groundwater (1.7%), in the glaciers and the ice caps of Antarctica and Greenland (1.7%), and in the air as vapor, clouds (consisting of ice and liquid water suspended in air), and precipitation (0.001%). Water moves continually through the water cycle of evaporation, transpiration (evapotranspiration), condensation, precipitation,and runoff, usually reaching the sea.

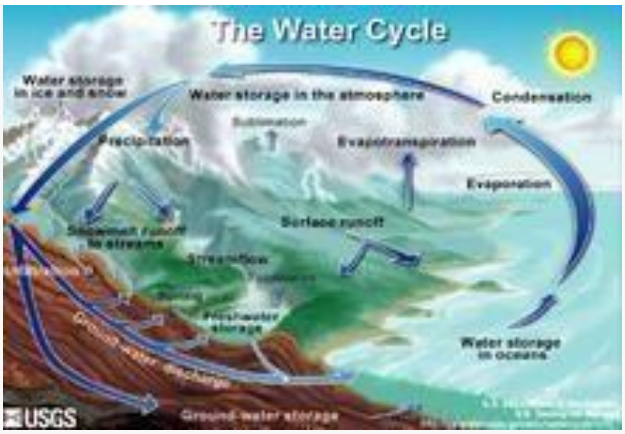
Water plays an important role in the world economy. Approximately 70% of the freshwater used by humans goes to agriculture. Fishing in salt and fresh water bodies is a major source of food for many parts of the world, providing 6.5% of global protein. Much of the long-distance trade of commodities (such as oil, natural gas, and manufactured products) is transported by boats through seas, rivers, lakes, and canals. Large quantities of water, ice, and steam are used for cooling and heating, in industry and homes. Water is an excellent solvent for a wide variety of substances both mineral and organic; as such it is widely used in industrial processes, and in cooking and washing. Water, ice and snow are also central to many sports and other forms of

entertainment, such as swimming, pleasure boating, boat racing, surfing, sport fishing, diving, ice skating and skiing.

WATER RESOURCES

Water occurs as both "stocks" and "flows". Water can be stored as lakes, water vapor, groundwater or aquifers, and ice and snow. Of the total volume of global freshwater, an estimated 69 percent is stored in glaciers and permanent snow cover; 30 percent is in groundwater; and the remaining 1 percent in lakes, rivers, the atmosphere, and biota. The length of time water remains in storage is highly variable: some aquifers consist of water stored over thousands of years but lake volumes may fluctuate on a seasonal basis, decreasing during dry periods and increasing during wet ones. A substantial fraction of the water supply for some regions consists of water extracted from water stored in stocks, and when withdrawals exceed recharge, stocks decrease.

WATER CYCLE



Water cycle

The water cycle (known scientifically as the hydrologic cycle) refers to the continuous exchange of water within the hydrosphere, between the atmosphere, soil water, surface water, groundwater, and plants.

Water moves perpetually through each of these regions in the *water cycle* consisting of the following transfer processes:

- Evaporation from oceans and other water bodies into the air and transpiration from land plants and animals into the air.

- Precipitation, from water vapor condensing from the air and falling to the earth or ocean.
- Runoff from the land usually reaching the sea.

Most water vapors found mostly in the ocean returns to it, but winds carry water vapor over land at the same rate as runoff into the sea, about 47 Tt per year whilst evaporation and transpiration happening in land masses also contribute another 72 Tt per year. Precipitation, at a rate of 119 Tt per year over land, has several forms: most commonly rain, snow, and hail, with some contribution from fog and dew. Dew is small drops of water that are condensed when a high density of water vapor meets a cool surface. Dew usually forms in the morning when the temperature is the lowest, just before sunrise and when the temperature of the earth's surface starts to increase. Condensed water in the air may also refract sunlight to produce rainbows.

Water runoff often collects over watersheds flowing into rivers. A mathematical model used to simulate river or stream flow and calculate water quality parameters is a hydrological transport model. Some water is diverted to irrigation for agriculture. Rivers and seas offer opportunities for travel and commerce. Through erosion, runoff shapes the environment creating river valleys and deltas which provide rich soil and level ground for the establishment of population centers. A flood occurs when an area of land, usually low-lying, is covered with water which occurs when a river overflows its banks or a storm surge happens. On the other hand, drought is an extended period of months or years when a region notes a deficiency in its water supply. This occurs when a region receives consistently below average precipitation either due to its topography or due to its location in terms of latitude.

The water on the surface of Earth is found mainly in its oceans (97.25 percent) and polar ice caps and glaciers (2.05 percent), with the balance in freshwater lakes, rivers, and groundwater. As Earth’s population grows and the demand for fresh water increases, water purification and recycling become increasingly important. Interestingly, the purity requirements of water for industrial use often exceed those for human consumption. For example, the water used in high-pressure boilers must be at least 99.999998 percent pure. Because seawater contains large quantities of dissolved salts, it must be desalinated for most uses, including human consumption.

STRUCTURE OF WATER

The water molecule is composed of two hydrogen atoms, each linked by a single chemical bond to an oxygen atom. Most hydrogen atoms have a nucleus consisting solely of a proton. Two isotopic forms, deuterium and tritium, in which the atomic nuclei also contain one and two neutrons, respectively, are found to a small degree in water. Deuterium oxide (D_2The human body contains from 55% to 78% water, depending on body size. To function properly, the body requires between one and seven liters (0.22 and 1.54 imp gal; 0.26 and 1.85 U.S. gal) of water per day to avoid dehydration; the precise amount depends on the level of activity, temperature, humidity, and other factors. Most of this is ingested through foods or beverages other than drinking straight water. It is not clear how much water intake is needed by healthy people, though the British Dietetic Association advises that 2.5 liters of total water daily is the minimum to maintain proper hydration, including 1.8 liters (6 to 7 glasses) obtained directly from beverages. Medical literature favors a lower consumption, typically 1 liter of water for an average male, excluding extra requirements due to fluid loss from exercise or warm weather.

Drinking water, also known as potable **water**, is **water** that is safe to **drink** or use for food preparation. The amount of **drinking water** required to maintain good health varies, and depends on physical activity level, age, health-related issues, and environmental conditions.

Drinking water is water that is used in drink or food preparation; **potable water** is water that is safe to be used as drinking water. The amount of drinking water required to maintain good health varies, and depends on physical activity level, age, health-related issues, and environmental conditions. For those who work in a hot climate, up to 16 liters (4.2 US gal) a day may be required. On average, American households use 300 gallons of water a day. Typically in developed countries, tap water meets drinking water quality standards, even though only a small proportion is actually consumed or used in food preparation. All public water suppliers in the US must uphold a certain standard of water quality. If the requirements are met, Americans can drink their local tap water. Other typical uses for tap water include washing, toilets, and irrigation. Greywater may also be used for toilets or irrigation. Its use for irrigation

however may be associated with risks. Water may also be unacceptable due to levels of toxins or suspended solids.

Globally, by 2015, 89% of people had access to water from a source that is suitable for drinking – called improved water source. In sub-Saharan Africa, access to potable water ranged from 40% to 80% of the population. Nearly 4.2 billion people worldwide had access to tap water, while another 2.4 billion had access to wells or public taps. The World Health Organization considers access to safe drinking-water a basic human right.

About 1 to 2 billion people lack safe drinking water. Water can carry vectors of disease. More people die from unsafe water than from war, then-U.N. Secretary-General Ban Ki-moon said in 2010. Third world countries are most affected by lack of water, flooding, and water quality. Up to 80 percent of illnesses in developing countries are the direct result of inadequate water and sanitation.

WATER SUPPLY

The most efficient and convenient way to transport and deliver potable water is through pipes. Plumbing can require significant capital investment. Some systems suffer high operating costs. The cost to replace the deteriorating water and sanitation infrastructure of industrialized countries may be as high as $200 billion a year. Leakage of untreated and treated water from pipes reduces access to water. Leakage rates of 50% are not uncommon in urban systems.

Springs are often used as sources for bottled waters. Tap water, delivered by domestic water systems refers to water piped to homes and delivered to a tap or spigot.

For these water sources to be consumed safely, they must receive adequate treatment and meet drinking water regulations.

6 HEALTH BENEFITS OF DRINKING WATER

Drinking plenty of water can help keep your body healthy and functioning at its highest capacity. Staying hydrated will help you to:

1. Improve physical performance.

During physical activity, our bodies use up a lot of water. So stay hydrated before, during, and after exercise helps to protect your body from harm, and to help you to perform better. Proper hydration can reduce fatigue, improve endurance, lower your maximum heart rate, and more. Drinking water can also help you to be less sore after exercise.

2. Help you to lose weight.

Are you having trouble with your weight loss efforts? Increasing your water intake may help you achieve better results. Studies show that people who are on diets lose more weight when they also increase their water intake. In one study, people on weight loss diets who drank 500 ml of water before each of their three daily meals for 12 weeks lost 4.6 more pounds on average than people who did not drink the additional water.

3. Boost your mood.

People who drink more water also tend to have better moods. One study found that when people who regularly drank less than 1.2 liters of water per day increased their intake to 2.5 liters per day, the participants experienced significantly less confusion, bewilderment, fatigue, and sleepiness. On the other hand, for people who regularly drank two to four liters of water per day who were then restricted to one liter per day, the reduced water intake led negative effects on mood, including decreased contentedness, calmness, and positive emotions.

4. Boost your brainpower.

When you consume more water, you may improve your cognitive performance, too. Several studies have shown that people drinking water during cognitive tasks performed much better than those people who did not drink water during the tasks. These results have been found in both adults and children. Studies suggest that even mild dehydration can impair cognitive function in the short-term. So next time you need to focus, take a test, or use all of your brainpower, keep a glass of water next to you and keep sipping.

5. Prevent headaches.

Drinking plenty of water every day has been proven to reduce the risk of gout attacks.

Water deprivation is a very common cause of headache. In most cases, rehydrating can provide relief from a headache. For some people, dehydration can also trigger a migraine, so be sure to keep your water intake regular if you are prone to getting migraines or headaches.

6. Protect against disease.

One of the most important answers to the question "Why is water important?" is its role in disease prevention. Proper hydration may be a useful tool in preventing a variety of health conditions and diseases. Staying hydrated may protect against kidney stones, constipation, asthma, urinary tract infections.

SOURCE OF WATER

Pure water is, of course, the healthiest choice you could make for your fluid intake. However, some people really don't like the taste. In such cases, instead of drinking water at all, it is better to resort to one of the following:

1. Fruit juice or soda: While fruit juices come with added preservatives and sugar, they can still provide quite a bit of hydration. The same goes for soda, which is 90% water.
2. Fruits and vegetables: Citrus fruits can also be an excellent choice. Not only do they have high water content, but they are also rich in vitamins. Similarly, vegetables like lettuce, celery, or zucchini are 90% water. Strawberries, watermelon, cucumber, tomatoes, broccoli, spinach, eggplant, and so on also have very high water content.
3. Soups or broths: If you dislike plain water, then soup can be a great replacement. Especially if you live in colder climates, then they can provide both warmth and hydration.
4. Other drinks: Warm drinks such as coffee, tea, or cocoa can also be an excellent way to provide some liquid intake. However, you will need to watch your sugar intake. Similarly, soy milk is another drink that is nearly 88.5% water.

Drinking water or potable water is water of sufficiently high quality that it can be consumed or used without risk of immediate or long-term harm. In most developed countries, the water supplied to households, commerce and industry is all of drinking water standard, even though only a very small proportion is actually consumed or used in food preparation. Clean drinking water has yet to be completely recognized as a basic human right. While water plays a vital role in every aspect of life, some do not realize the gravity of the shrinking clean water sources.

When unclean water is consumed, it can cause serious illnesses, sometimes leading to death. According to statistics provided by the World Health Organization (WHO), about 1. 1 billion of the world's 6 billion people do not have access to clean drinking water

DRINKING WATER POLLUTION

Drinking Availability of drinking water is largely affected by its pollution, which has been leading and will lead to a decrease in its availability in the coming future.

Drinking water pollution is a bigger problem than most people realize. While drinking water filters and bottled water has become a staple in our society, most consumers still use unfiltered drinking water for cooking, filling pet water bowls and bottles, and for mixing powdered drink mixes. Drinking water pollution is a big enough problem within our country to warrant the same vigilance as we give other health hazards. There are numerous sources that pile up into serious contamination potential for all drinking water.

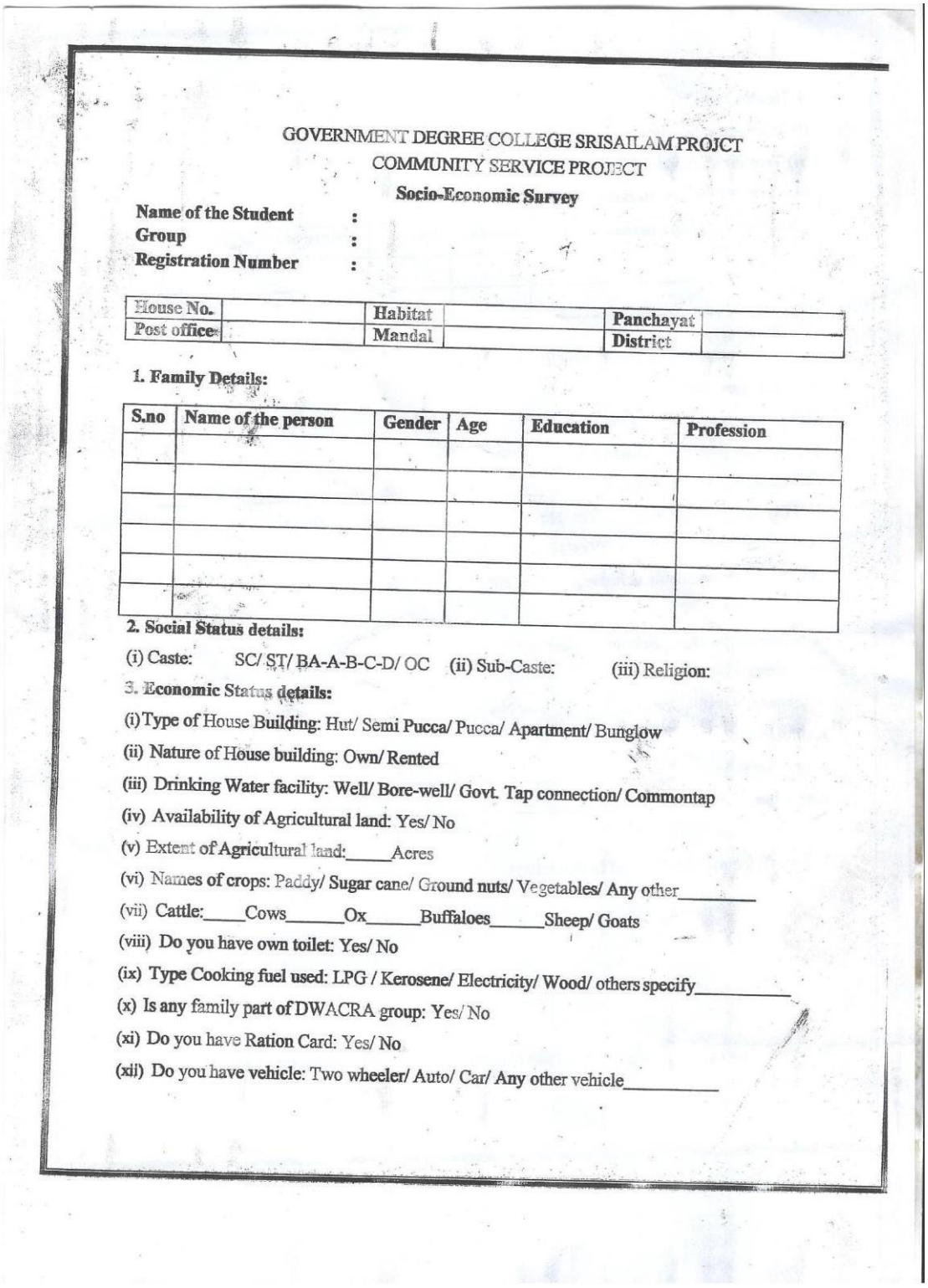
Whether your water is coming from a well on your property or if you are using "filtered" city water sources, the chances that you have a problem with drinking water pollution is quite high. Groundwater testing has shown that in any given area throughout the country as many as 200 variable contaminants have been detected. Long term exposure can create numerous health problems, including lead poisoning. While not every single contaminant is destined to cause a serious health problem or even any health problem at all, you can not count on your local contaminants to be harmless.

Agriculture practices are one of the largest sources of groundwater contaminants. The chemical used in controlling bugs and other chemically based treatments run directly into the groundwater supply. Pesticides and poisonous agricultural raw waste can contaminate more than 40% of the surrounding groundwater.Ingress of seawater into coastal aquifers as a result of over-extraction of ground water has made water supplies more saline, unsuitable for drinking and irrigation.

Pollution of ground and surface waters from agrochemicals (fertilizers and pesticides) and from industry poses a major environmental health hazard, with potentially significant costs to the country. Another major contributor to drinking water pollution is urban run off. Another human based contribution that needs to be controlledat the source in order to save our drinking water supply. When rain washes urban trash, chemicals, and pollutants from the structures and roadways of populated areas, there isno way for the water to filter itself on its way to the groundwater.

Everything from basic trash, cigarette butts, antifreeze, motor oil, gasoline, pesticides, and other daily use products are all contributing factors in groundwater contamination caused by urban runoff. Practicing safer disposal practices of automobilechemicals, putting together trash cleanup projects, and using environmentally safe household products can help cut down on urban runoff pollutants. Lead is one of the most concerning urban runoff pollutants, as lead poisoning can cause learning problems, chronic emotional and health issues, and is non-reversible. Drinking lead- contaminated water is a serious health problem.

QUESTIONNAIRE



GOVERNMENT DEGREE COLLEGE SRISAILAM PROJCT

COMMUNITY SERVICE PROJECT

Socio-Economic Survey

Name of the Student :
Group :
Registration Number :

House No.		Habitat		Panchayat	
Post office		Mandal		District	

1. Family Details:

S.no	Name of the person	Gender	Age	Education	Profession

2. Social Status details:

(i) Caste: SC/ ST/ BA-A-B-C-D/ OC (ii) Sub-Caste: (iii) Religion:

3. Economic Status details:

(i) Type of House Building: Hut/ Semi Pucca/ Pucca/ Apartment/ Bunglow

(ii) Nature of House building: Own/ Rented

(iii) Drinking Water facility: Well/ Bore-well/ Govt. Tap connection/ Commontap

(iv) Availability of Agricultural land: Yes/ No

(v) Extent of Agricultural land:_____Acres

(vi) Names of crops: Paddy/ Sugar cane/ Ground nuts/ Vegetables/ Any other_____

(vii) Cattle:_____Cows_____Ox_____Buffaloes_____Sheep/ Goats

(viii) Do you have own toilet: Yes/ No

(ix) Type Cooking fuel used: LPG / Kerosene/ Electricity/ Wood/ others specify_____

(x) Is any family part of DWACRA group: Yes/ No

(xi) Do you have Ration Card: Yes/ No

(xii) Do you have vehicle: Two wheeler/ Auto/ Car/ Any other vehicle_____

4. Health Details:

(i) Diseases in family:

(ii) Treatment in which Hospital:

(iii) Any PH Persons in family: Yes/ No

S.no.	Name of the person	Gender	Age	Nature of Disability

(iv) Do you have Govt. Arogyasri Card: Yes/ No

5. Other Details:

(i) Do You have TV: Yes/ No

(ii) Do You have Dish Connection: Yes/ No

(iii) Channels Watched regularly: 1._____ 2._____ 3._____

(iv) Do you have Mobile: Yes/ No Mobile Number:

(v) Do you have Laptop: Yes/ No

(vi) Is internet available at home: Yes/ No

6. Name of the Govt. Schemes received:

Jagananna Vidhya Deevena Yes/ No

Jagananna Vasathi Deevena Yes/ No

Raithu Bharosa Yes/ No

Any other scheme: _____

Any other scheme: _____

7. Any three problems faced in the village:

(i)

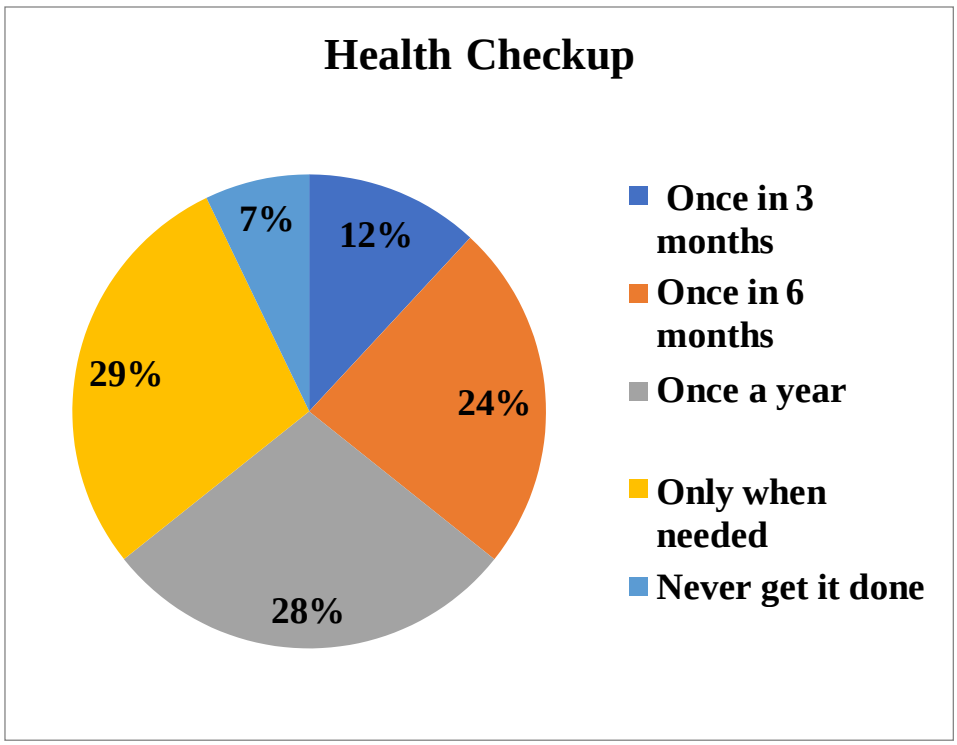
(ii)

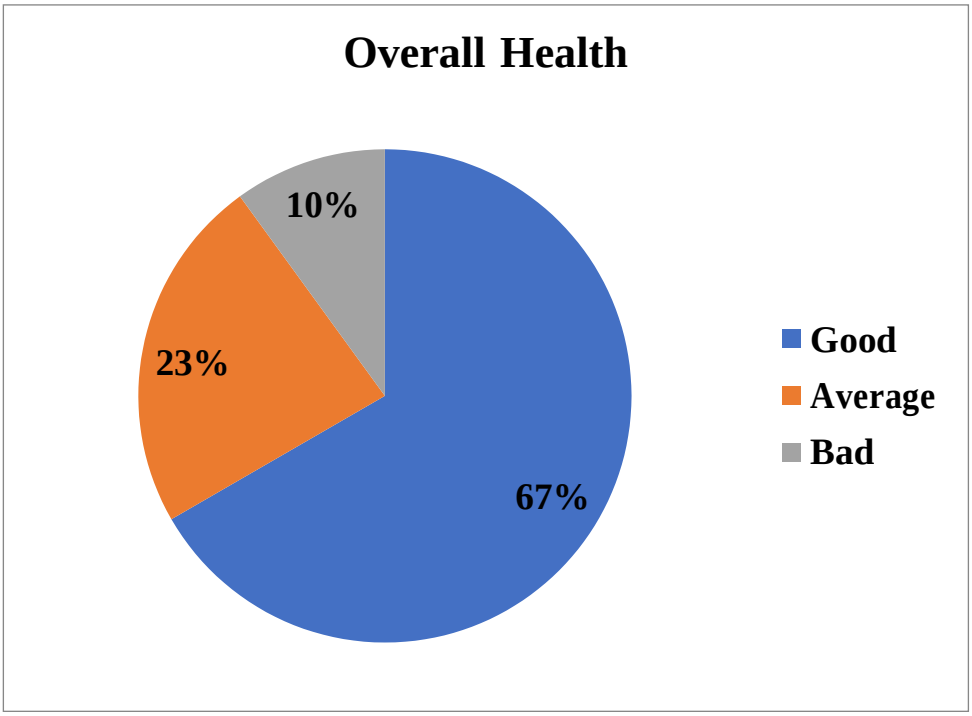
(iii)

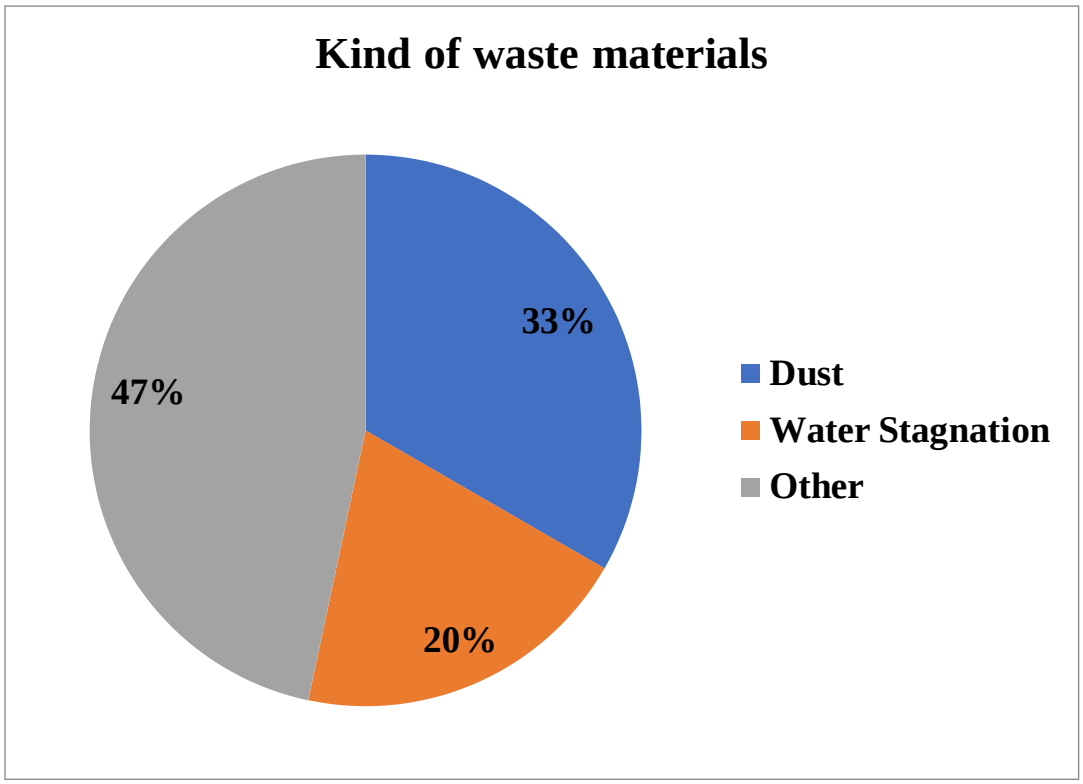
Place:

Date: **Signature of the Mentor** **Signature of the Student**

DATA INTERPRETATION AND RESULTS






Kind of waste materials
33%
20%
47%
Dust
Water Stagnation
Other

CONCLUSIONS

Our water resources, irregularly distributed in space and time, are under pressure due to major population change and increased demand. Access to reliable data on the availability, quality and quantity of water, and its variability, form the necessary foundation for sound management of water resources. The different options for augmentation expand the boundaries of the water resource in a conventional sense, helping to match demand and supply. All components of the hydrological cycle, and the influence of human activities on it, need to be understood and quantified to efficiently and *sustainably* develop and protect our water resources.

- Climate change is having a significant impact on weather patterns, precipitation and the hydrological cycle, affecting surface water availability, as well as soil moisture and groundwater recharge.
- The growing uncertainty of surface water availability and increasing levels of water pollution and water diversions threaten to disrupt social and economic development in many areas as well as the health of ecosystems.
- Groundwater resources can, in many instances, supplement surface water, particularly as a source of drinking water. However, in many cases, these aquifers are being tapped at an unsustainable rate or affected by pollution. More attention should be paid to sustainable management of non-renewable groundwater.
- Many traditional practices are being refined (e.g. rainwater harvesting), while more recent advances (e.g. artificial recharge, desalination and water reuse) are being developed further. More support needs to be given to policy options, such as demand management, which stress more efficient use of water resources, as well as to technical solutions on the supply side.
- The projected increased variability in the availability and distribution of freshwater resources demands political commitment to supporting and advancing technology for the collection and analysis of hydrological data. More up-to-date information will enable policy-makers to make better informed decisions regarding water resources management.

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