

Experiential Learning through Field Survey

**Department of Chemistry -2021-22
Providence Women's College Calicut**

A Preliminary Field Survey on the Perception of Local Public on Drinking Water Quality and Water Conservation

Report

Introduction

Water is one of the basic necessities of the humans and most important natural resources. Deteriorating water quality and emerging water scarcity is one of the greatest crises of this era. In addition to anthropogenic activities, climatic changes are also contributing to water pollution. Health issues due to the use of contaminated water is also increasing in an alarming rate. Water quality monitoring and ensuring safe drinking water to the citizens is crucial in environmental protection strategies. Kerala is a land blessed with high rainfall and large number of water bodies with an annual rainfall of 3000 mm. In spite of numerous awareness and water literacy programmes about 26.90 per cent of water sources in Kerala are completely polluted as per the study conducted by Kerala State Literacy Mission Authority (KSLMA). The present study was conducted to assess the knowledge of the respondents about drinking water quality, water pollution, water treatment techniques, sanitation and waterborne diseases and water conservation methods.

Objectives

1. Gain an understanding on the awareness level of local public on water quality and protecting groundwater quality
2. Evaluate the challenges in water governance through the perception of local public.
3. Create an awareness among the students about the water quality of their residential area.

Methodology

Students conducted face-to-face interviews among 160 households in their residential area using structured questionnaire survey to collect data from the local public. The survey included questions to understand the water sources available to the citizens and

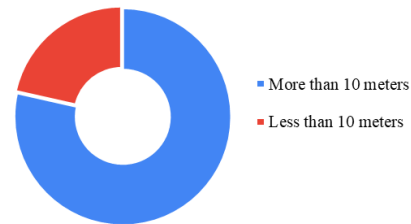
their awareness and perception on water treatment methods, water conservation and water borne diseases (Annexure 1) and the responses were recorded.

Results and Discussions

a. Source of drinking water: During the field survey, it was found that majority of the respondents depends on dug wells (87%) for drinking water. The high rainfall received in the place is recharging ground water. It was also found that majority of the respondents maintains a safe distance between dug well and septic tank.

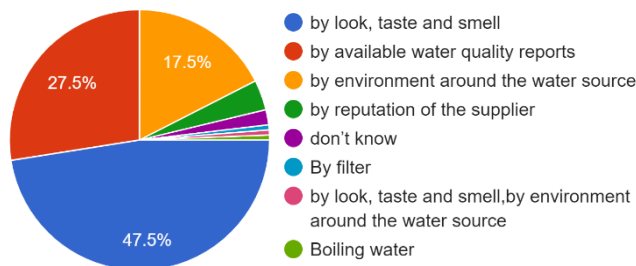


Source of drinking water

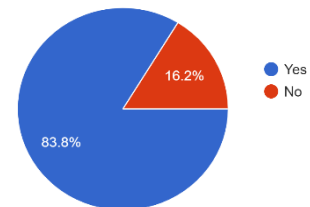


Distance of septic tank from dug well in metres

b. Water quality assessment and awareness on water quality: About 84% of the respondents participated in the survey is aware about the water quality assessment facilities available in their locality, but only 28% have tested their water to ensure the safety to use as drinking water. Majority of the respondents use water by its appearance, taste and smell.



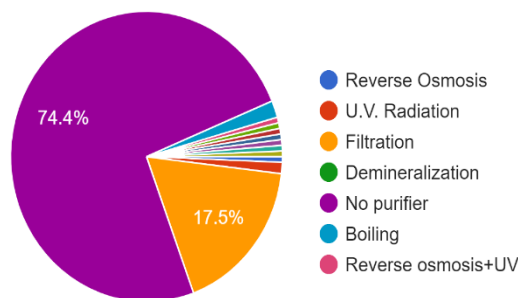
Strategy to ensure water quality



Awareness on water quality assessment facilities

c. Usage of water purifier at household:

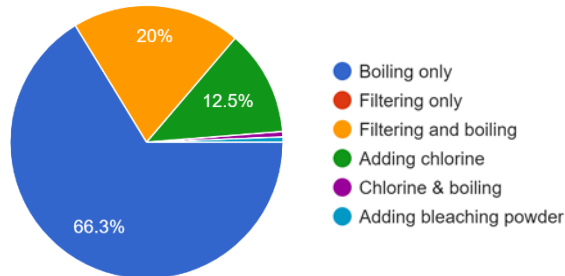
More than 70% of the respondents are not using water purifier at the house hold and among those who use the purifier, prevalent purification technology is filtration



Water purification techniques

d. Water quality during monsoon and summer

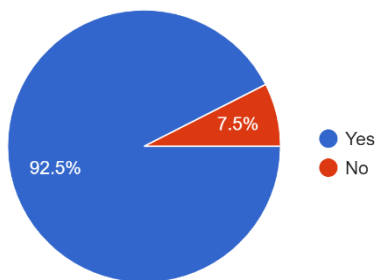
Water from the dug wells is not enough for the majority of the respondents during summer and they depend on water from other sources. But monsoon doesn't affect water quality much. The quality of drinking water is ensured during this period by boiling.



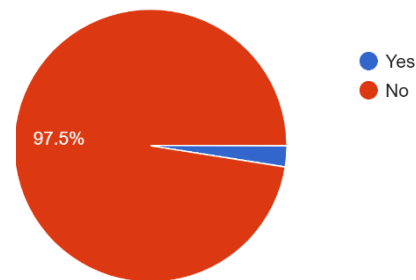
Household water purification techniques to ensure quality

e. Water borne diseases

Respondents are well aware of water borne diseases and occurrence of water born disease among the members of household is negligible.

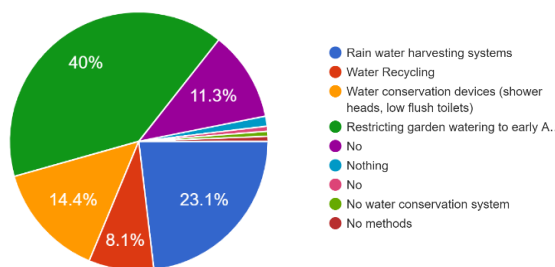


Awareness on water borne diseases

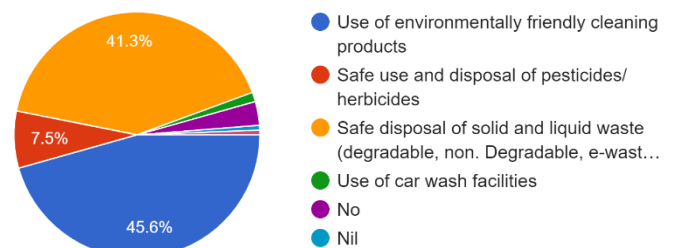


Occurrence of water borne

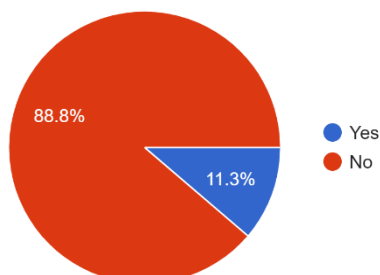
f. Water conservation and recharge



Water conservation strategies



Strategies to improve water quality



Water recharge at household

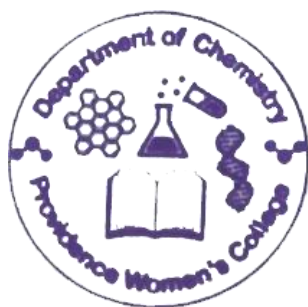
The survey result indicates that water conservation and recharging are not practised efficiently. The majority of the households participated in the survey depends on the groundwater resources. Hence it is highly essential to take necessary action to ensure the protection and sustainable use of groundwater resources. Public should be made aware of the vital need to protect, preserve and conserve water resources for the future. Measures should be taken to break the barriers between the local bodies and the public through knowledge sharing. Students can aid the local bodies to bridge the gap and enhance the water literacy of the public.


Limitations

The survey was done at the residential area of students and hence the data is not complete to represent a particular zone.

Conclusion

Majority of the respondents use dug well as the source of drinking water and are aware of water borne diseases. But the efforts to conserve water and recharge water resources is minimal. Hence more programmes should be organized to create awareness and provide facilities to ensure conservation of water resources. The survey helped the students to understand about the water quality of their residential area and the issues related with drinking water. Hence, they can come up with solutions to help the local public thus extending their knowledge to the society.



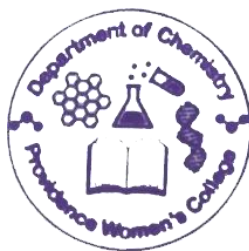

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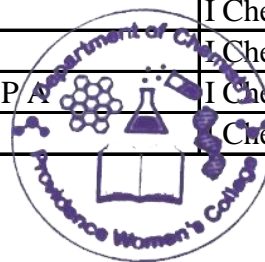
**Questionnaire for Preliminary Field Survey on the Perception of Local
Public on Drinking Water Quality and Water Conservation**

1. Name of the respondent:
2. Address with phone number:
3. Where does your drinking water come from?
 - Dug well
 - Tube well
 - Tap from Kerala Water Authority
 - Tap from community water scheme
 - Surface water (river, stream, spring)
 - Other (please specify)
4. How far (in meters) is your dug well from the septic tank?
5. Have you ever conducted quality test of available water for domestic use?
Yes / No
6. Are you aware of the water quality assessment facilities available in your area?
Yes / No
7. How do you ensure the quality your water is safe for drinking?
 - by look, taste and smell
 - by available water quality reports
 - by environment around the water source
 - by reputation of the supplier
 - don't know
8. Do you use a water purifier at home? If yes what is the purification technology used in your water purifier?
 - Reverse Osmosis
 - U.V. Radiation
 - Filtration
 - Demineralization
 - Others (Specify)
9. Do you face any issue with water quality during monsoon (heavy rain, flood)? If yes how you improve its quality?
10. Do you face any issue with water quality / scarcity during summer?
11. Are you aware of water borne diseases?
12. Has anyone in your household suffered from water borne disease in the past six months?
13. What are the household water treatment methods you practice?
 - Boiling only
 - Filtering only
 - Filtering and boiling
 - Adding chlorine

- Other (Specify)
14. Do you practice any of the water conservation measures in your home?
- Rain water harvesting systems
 - Water Recycling
 - Water conservation devices (shower heads, low flush toilets)
 - Restricting garden watering to early AM or PM
 - Other (specify)
15. Do you practice water quality improvement measures?
- Use of environmentally friendly cleaning products
 - Safe use and disposal of pesticides/herbicides
 - Safe disposal of solid and liquid waste (degradable, non. Degradable, e-waste, etc)
 - Use of car wash facilities
 - Other(specify)
16. Do you have any water recharge system at home?
Yes /No



List of students participated in the field survey		
Sl. No	Name	Class
1	Anaina Azeez K T	I Chemistry
2	Janis Bobby	I Chemistry
3	Krishna Chandra T	I Chemistry
4	Sagariga Surendran K	I Chemistry
5	Shania Nectarine Mendoza	I Chemistry
6	Adhithya Saji	I Chemistry
7	Anjalikrishna T C	I Chemistry
8	Ayisha Liba T K	I Chemistry
9	Fathima Hanna P T	I Chemistry
10	Gopika Shanoj	I Chemistry
11	Liya K P	I Chemistry
12	Manjima M	I Chemistry
13	Megha K P	I Chemistry
14	Nandana C T	I Chemistry
15	Nandana M M	I Chemistry
16	Nayana Shanmughan M	I Chemistry
17	Shradha K Yesudas	I Chemistry
18	Mufeda Mariyam	I Chemistry
19	Adra S	I Chemistry
20	Ananya Jayaprakash	I Chemistry
21	Avanya K P	I Chemistry
22	Fahima A T	I Chemistry
23	Gayathri J P	I Chemistry
24	Krishna Priya V	I Chemistry
25	Linda S Babu	I Chemistry
26	Nandana Vinod	I Chemistry
27	Nandhana T K	I Chemistry
28	Sanika Sunil M K	I Chemistry
29	Shijina V	I Chemistry
30	Sreya Santhosh	I Chemistry
31	Yudhika M	I Chemistry
32	Akhina K Krishnan	I Chemistry
33	Arya K R	I Chemistry
34	Avani Rajeev	I Chemistry
35	Jasmine K M	I Chemistry
36	Liya Denny	I Chemistry
37	Megha V	I Chemistry
38	Rena Fathima P	I Chemistry
39	Sreelakshmi S	I Chemistry



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