Water Management Educational Opportunities for Local Communities at SRM University-AP

SRM University–AP takes water education out of the classroom and into the surrounding communities. Through field visits, focus group discussions and student-led awareness drives, the university has engaged villagers, village officials and school students on water quality, safe water practices, rainwater harvesting and sanitation. Three activities are documented in this report:

- **Water sample collection and community awareness** in four villages (Kuragallu, Jupudi, Lam and Paladugu), with a combined population of 17,272 (2011 Census).
- **Focus group discussions on rooftop rainwater harvesting** in Ainavolu village, Thullur Mandal, Guntur District, with panchayat officials, ward representatives and residents.
- **The student project "H2-Oh! The Truth About Water and Sanitation"**, a survey of 108 respondents and an awareness session with pledge-taking at Sri Vidyalaya EM High School.

1. Water Sample Collection and Community Awareness

Water samples were collected from selected locations in Kuragallu, Jupudi, Lam and Paladugu, and awareness was provided to local community members on water quality and its importance for public health and environmental sustainability. The field visits brought the university directly into contact with the communities and supported field-level work on water quality assessment and sustainable water practices.

Village	Population (2011 Census)	Sample collection date	Sources sampled
Kuragallu	4,658	22 January 2025	Groundwater, municipal water and mineral water
Jupudi	2,422	22 January 2025	Water sources in the village
Lam	6,552	2 March 2025	Municipal supply and mineral water
Paladugu	3,640	21 January 2025	Water sources in the village
Total	**17,272**		



Figure 1. Community member with a water sample collected during the field visit (1)



Figure 2. Community member with a water sample collected during the field visit (2)



Figure 3. Community member with a water sample collected during the field visit (3)

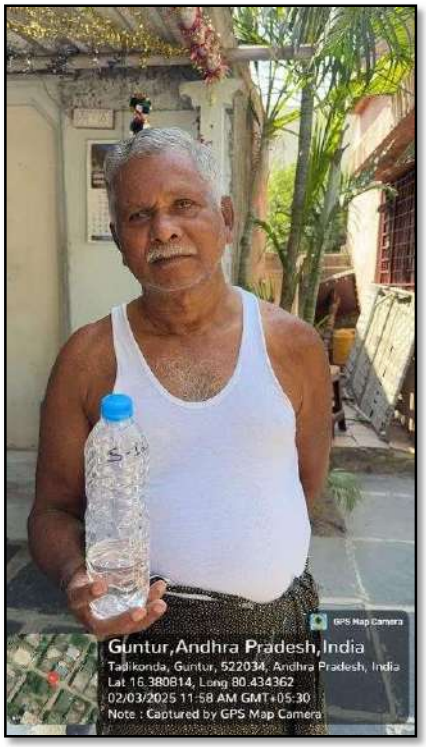


Figure 4. Community member with a water sample collected during the field visit (4)



Figure 5. Collecting a water sample from a surface water body

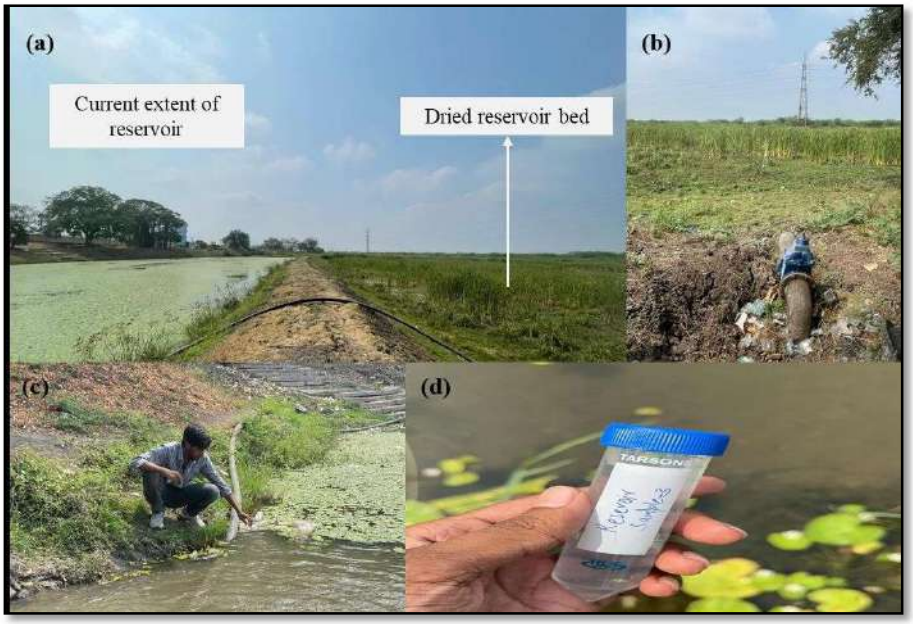
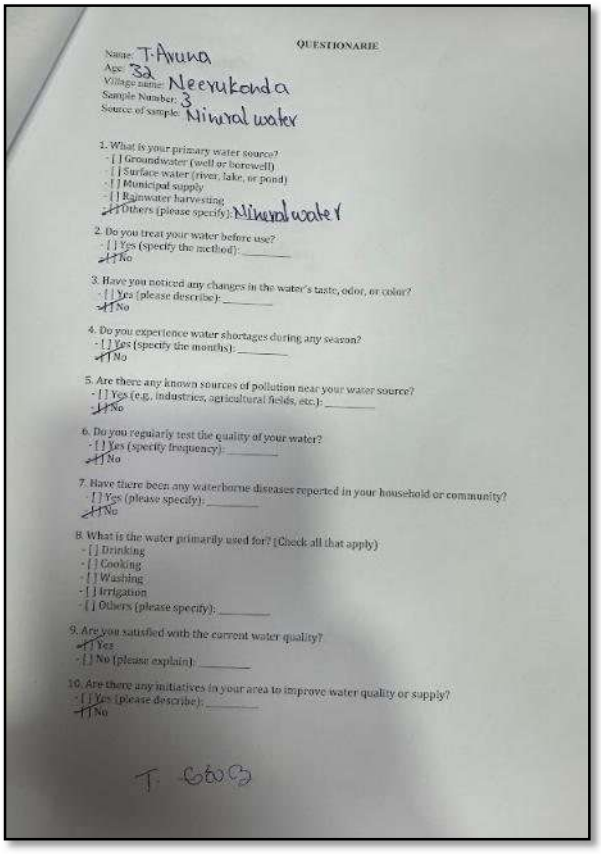


Figure 6. Field sampling at a reservoir and a surface water body: (a) current extent of reservoir and dried reservoir bed, (b) and (c) sampling, (d) collected sample



QUESTIONARIE

Name: T. Aruna
Age: 32
Village name: Neerukonda
Sample Number: 3
Source of sample: Mineral water

1. What is your primary water source?
- [ ] Groundwater (well or borewell)
- [ ] Surface water (river, lake, or pond)
- [ ] Municipal supply
- [ ] Rainwater harvesting
- [x] Others (please specify): Mineral water

2. Do you treat your water before use?
- [ ] Yes (specify the method): _____
- [x] No

3. Have you noticed any changes in the water's taste, odor, or color?
- [ ] Yes (please describe): _____
- [x] No

4. Do you experience water shortages during any season?
- [ ] Yes (specify the months): _____
- [x] No

5. Are there any known sources of pollution near your water source?
- [ ] Yes (e.g., industries, agricultural fields, etc.): _____
- [x] No

6. Do you regularly test the quality of your water?
- [ ] Yes (specify frequency): _____
- [x] No

7. Have there been any waterborne diseases reported in your household or community?
- [ ] Yes (please specify): _____
- [x] No

8. What is the water primarily used for? (Check all that apply)
- [ ] Drinking
- [ ] Cooking
- [ ] Washing
- [ ] Irrigation
- [ ] Others (please specify): _____

9. Are you satisfied with the current water quality?
- [x] Yes
- [ ] No (please explain): _____

10. Are there any initiatives in your area to improve water quality or supply?
- [ ] Yes (please describe): _____
- [x] No

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Figure 7. Field record sheet for a water sample

Field measurements

Field measurements of pH and total dissolved solids (TDS) were recorded for the samples from Kuragallu and Lam, giving an initial screening of the water in each village.

Parameter	Kuragallu (10 samples)	Lam (10 samples)
pH range	6.56 to 7.75	6.67 to 8.46
Mean pH	7.26	7.53
TDS range	50 to 3,655	57 to 1,164
Mean TDS	1,042.6	262
Samples with TDS above 500	7	2
Samples with TDS above 1,000	5	1

All 20 recorded pH values fall within the BIS drinking-water pH range of 6.5 to 8.5. TDS varied more between sources, and it was lower in Lam overall than in Kuragallu. The readings were used to show the communities that water from different sources can differ in dissolved mineral content, and why each source should be tested before it is relied on for drinking. The samples support further laboratory assessment, including microbiological and chemical parameters, which is planned.

2. Focus Group Discussions on Rooftop Rainwater Harvesting, Ainavolu

Ainavolu village, in Thullur Mandal, Guntur District, has saline, high-fluoride groundwater and a piped supply that does not meet potable standards, so residents depend on privately sold 10-litre and 20-litre containers for drinking water. The university engaged the community to create awareness about rooftop rainwater harvesting (RRWH) and to understand why residents have not adopted it. The rooftops of the village could harvest about 20.16 million litres of rainwater a year.

How the discussions were run

- **Five focus group discussions** were held with panchayat officials and ward representatives. In total, five government officials and twelve ward representatives took part, and each group had at least three participants including at least one government official.
- A **discussion guide** was prepared in advance, the purpose was explained to every group, and the same questions were used in all groups. Every participant was given a chance to speak, and the discussions were video-recorded and analysed.
- **One-on-one household interactions** followed, arranged with the local governing body. Since rainwater harvesting was not a familiar term in the

village, a short introduction to how the system works and its benefits was given, and residents then asked for details and shared the limitations they foresaw.



Figure 8. Field photograph captured during a focus group discussion at Ainavolu

What the community said

Residents were willing to install rainwater harvesting once they understood the concept, but none had done so. Seventeen barriers were identified under four categories: technical, financial, institutional and behavioural.

Concern	Details
Raised most strongly	Lack of technical knowledge, lack of subsidy, absence of one-stop shops for components, shortage of skilled installers and the upfront cost of installation
Other concerns	Absence of successful demonstration projects, lack of information centres and guidelines in the local language, and doubts about the quality of harvested water
Way forward suggested	Awareness workshops and information centres, subsidies and incentives, installation kits through local vendors, training of local technicians and periodic monitoring after installation

The findings were used to prepare a community-level roadmap covering awareness, support, monitoring, and feedback and promotion.

3. Student Awareness Project: "H2-Oh! The Truth About Water and Sanitation"

Team Hydrify, a student team with project managers, research leads, operations leads and documentation leads, carried out a five-week project on SDG 6 from 14 August to 19 September 2025. Its objectives were to assess the accessibility, reliability and quality of drinking water and the state of sanitation, hygiene and waste management in the community, and to suggest small-scale improvements. The scope covered awareness drives and data collection and left out high-cost and large-scale infrastructure. Stakeholders were students, faculty and community members. About ₹700 was budgeted for charts, stationery and posters.

Phase	Period	Work done
Plan and research	Week 1 (14 to 18 Aug)	Set objectives in line with SDG 6, assigned roles, researched water and sanitation issues and identified the audience
Data and awareness	Week 2 (23 Aug to 3 Sept)	Survey and data collection, preparation of charts, posters and presentations
Implement and engage	Week 3 (4 to 10 Sept)	Awareness sessions with students, community members and faculty, distribution of digital materials and collection of feedback
Analyse and report	Week 4 (11 to 19 Sept)	Compiled survey results, measured the effectiveness of the awareness work and prepared the final report

Survey and awareness sessions

A survey of 108 community members and students assessed awareness, access and challenges related to clean water and sanitation, including water use habits, sanitation practices and problems such as lack of facilities and unsafe storage. Awareness sessions highlighted safe water storage, regular handwashing and proper sanitation, and question and answer sessions helped to clear up misconceptions and encourage changes in behaviour. To widen participation, additional sessions were held for smaller groups instead of one large gathering. The responses were cleaned and verified in Excel before analysis.

The awareness activity was conducted at Sri Vidyalaya EM High School, Edupugallu, on 13 September 2025, where students took a pledge to use water responsibly and keep sanitation facilities clean.



Figure 9. Students taking a pledge at the awareness activity, Sri Vidyalaya EM High School

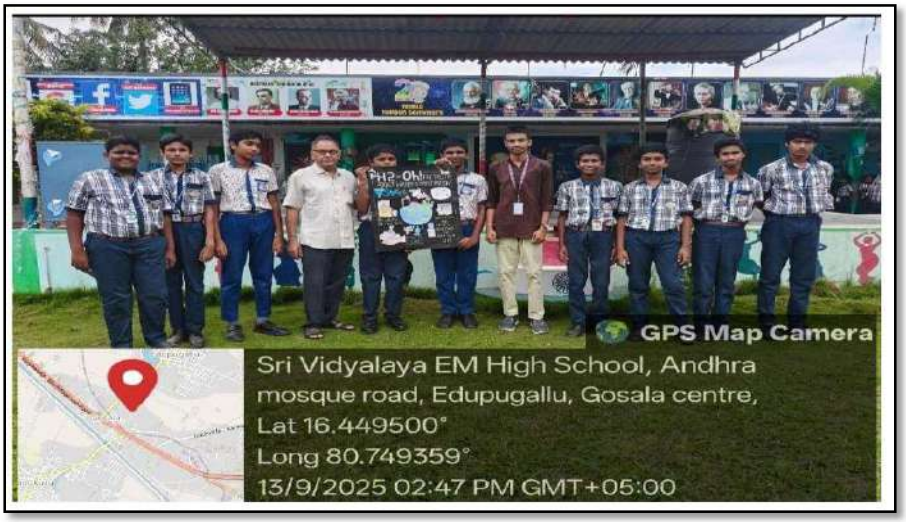


Figure 10. Awareness activity conducted at Sri Vidyalaya EM High School with the project team

Key findings

Finding	Result
Rating of water quality	Average rating of 3.75 (standard deviation 0.94): most respondents rated their water quality as good, with similar opinions across respondents
Climate change and water quality	79 of 108 respondents (73%) believe climate change affects water quality, 29 of them severely; 21 (19.4%) see no noticeable impact and 8 are not sure
Obstacles to clean water	Pollution from industry, agriculture or sewage: 73 respondents (67.6%); lack of proper infrastructure: 63 (58.3%); weak enforcement of environmental policies: 47 (43.5%)
Illness and purification	Lack of awareness and irregular use of purification methods are linked to higher illness rates; awareness without consistent practice gives limited health protection
Water source and reliability	Households with piped or filtered water report the most reliable supply; users of community sources have less consistent access

Outcomes and recommendations

Participants reported a better understanding of safe water storage and the importance of handwashing, and community discussion on safe drinking water and waste disposal increased. The team recommended that the community:

- set up local groups to monitor water quality and sanitation facilities;
- promote rainwater harvesting and water conservation practices;
- hold regular cleanliness and awareness drives;
- adopt simple waste segregation and composting methods; and
- partner with local bodies and NGOs for continued WASH (Water, Sanitation and Hygiene) support.

4. Contribution to the Sustainable Development Goals

Together, the three activities give local communities direct opportunities to learn about water management.

Activity	Community reached	Main SDG links
Water sample collection and awareness	Kuragallu, Jupudi, Lam and Paladugu villages	SDG 6, SDG 3 and SDG 11
Focus group discussions on rooftop rainwater harvesting	Ainavolu village: panchayat officials, ward representatives and residents	SDG 6, SDG 3, SDG 11 and SDG 13
H2-Oh! awareness project	Students of Sri Vidyalaya EM High School and community members (108 survey respondents)	SDG 6

- **SDG 6, Clean Water and Sanitation:** assessing water quality, promoting safe water practices and an alternative drinking water source through rainwater harvesting.
- **SDG 3, Good Health and Well-being:** showing why water quality matters for community health and reducing dependence on contaminated or untreated water.
- **SDG 11, Sustainable Cities and Communities:** encouraging community participation in local water planning.
- **SDG 13, Climate Action:** building community readiness to cope with water scarcity.

5. Conclusion

SRM University–AP provides educational opportunities on water management to local communities through field sampling, focus group discussions and school awareness drives. These activities reached villagers in five villages and students at a local school, introduced rooftop rainwater harvesting, shared the meaning of water quality readings, and recorded what communities need to manage water safely. The collected samples are planned for laboratory testing, and the findings give a basis for follow-up engagement with the communities.