University	:	Karunya University
Country	:	India
Web Address	:	www.karunya.edu

[4] Water (WR)

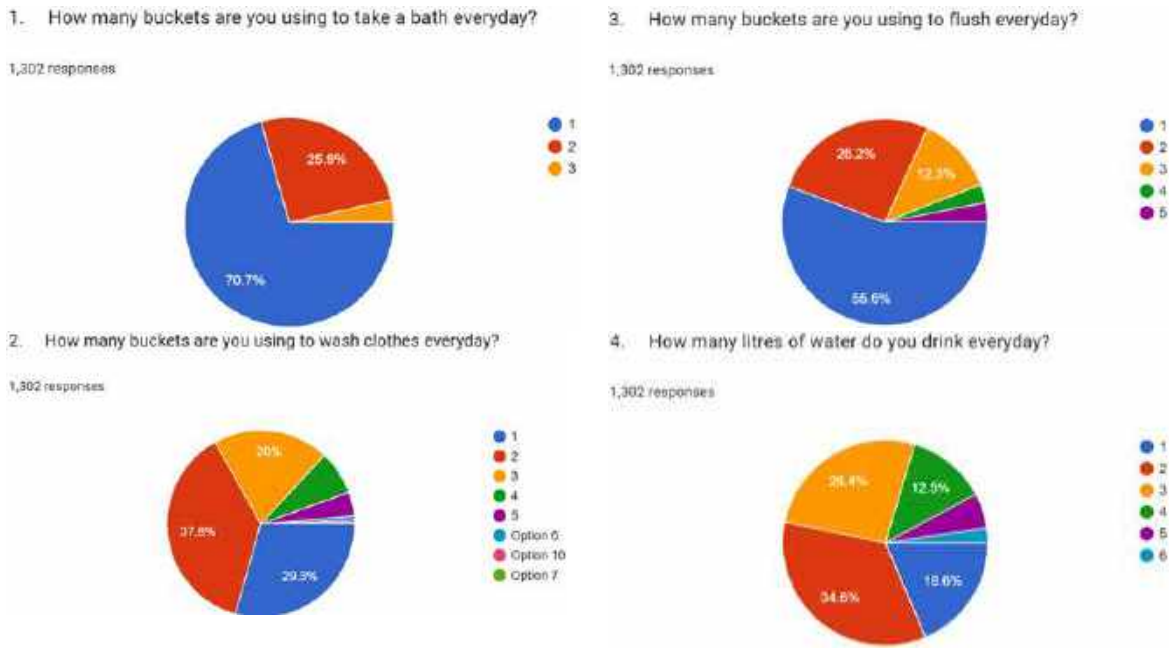
[4.6] Planning, implementation, monitoring and/or evaluation of all programs related to Water Management through the utilization of Information and Communication Technology (ICT) (WR.6)

Water Flow Transmitter

Distribution control point

Motor control and automation panel

Smart water control system



Survey of water usage in hostel using ICT tool

Description:

- **Planning:** Karunya Institute of Technology and Sciences developed a comprehensive **Smart Water Management Strategy** integrating **Information and Communication Technology (ICT)** for sustainable campus-wide water conservation. The initiative included mapping water sources, setting measurable conservation targets, and identifying optimization opportunities using water analytics and IoT-based data collection.

- **Implementation:** ICT-enabled systems were deployed across the campus, including wireless water level controllers, smart motor control panels, and digital flow transmitters to automate water distribution. These systems ensure efficient operation of borewell pumps, prevent overflow and dry-run conditions, and provide real-time data on consumption and motor performance. Awareness programs were also conducted to promote water conservation among students and staff.

- **Monitoring:** Water levels, flow rates, and pump operations are continuously monitored using **IoT-based sensors** and **data transmitters**. Real-time dashboards display water usage trends, and alert systems notify maintenance teams of anomalies such as leakages or abnormal consumption. This approach minimizes manual supervision and enhances resource efficiency. A hostel-level survey was conducted to complement IoT-based monitoring. Findings revealed that **70.7% of students use one bucket for bathing** and **66.9% use one to two buckets for washing clothes**, resulting in an **average daily usage of approximately 80.5 litres per student**. With around **1,302 hostel residents**,

total hostel consumption is estimated at **~105,000 litres per day**. These insights support data validation and guide continuous improvement of water conservation strategies.