Progress Report: SDG 6 (Clean Water and Sanitation) – Chukwuemeka Odumegwu Ojukwu University (COOU)

2024/2025 Session

Executive Overview

Chukwuemeka Odumegwu Ojukwu University (COOU) advances Sustainable Development Goal 6 (SDG 6: Clean Water and Sanitation) by expanding campus water distribution networks, implementing sanitation and waste management standards, and conducting empirical water quality research. Guided by the university's institutional **"3Vs Agenda" (Values, Viability, Visibility)**, COOU combines operational facilities management across its campuses (Igbariam, Uli, and Awka) with academic research to ensure safe drinking water access, improve hygiene infrastructure, and protect local freshwater ecosystems in Anambra State.

Key Areas of Progress & Implementation

1. Campus Water Supply Infrastructure & Access

COOU maintains decentralized water distribution systems across its three campuses to support academic activities, student residential halls, and agricultural facilities:

- **Deep Borehole Infrastructure:** The university operates heavy-duty borehole facilities equipped with storage overhead tanks and reticulation systems at the Igbariam, Uli, and Awka campuses to provide groundwater access for staff and students.

- **Rainwater Harvesting & Storage:** Campus structures utilize roof catchment systems and storage reservoirs to collect rainwater during the wet season, reducing reliance on groundwater extraction and serving non-potable operational needs.

- **Water Distribution for Agriculture:** At the Igbariam campus, dedicated water extraction infrastructure supports livestock production, aquaculture ponds, and crop irrigation within the Faculty of Agriculture.

2. Sanitation Facilities & Hygiene Management

To maintain environmental health and prevent waterborne disease transmission:

- **Sanitary Facilities & Hostels:** COOU provides modern lavatory blocks, water-borne sewage systems, and handwashing stations within academic blocks, administrative centers, and university-managed student accommodation units.

- **Waste & Environmental Health Controls:** The University Health Services, alongside the Physical Planning and Works departments, enforces environmental sanitation guidelines to prevent refuse dump runoff from contaminating nearby groundwater channels.

- **Hygiene Campaigns:** Student affairs and health units run periodic hygiene awareness drives to discourage open defecation and enforce sanitary waste disposal practices in student lodges surrounding university premises.

3. Water Quality Research, Testing & Surveillance

COOU researchers across the Faculties of Natural Sciences, Environmental Sciences, and Engineering conduct critical baseline studies on local water safety and pollution mitigation:

- **Bacteriological & Heavy Metal Profiling:** Faculty in Microbiology and Environmental Chemistry carry out routine physicochemical and bacteriological evaluations of borehole and surface water sources on campus and in surrounding host communities. Research evaluates parameters such as coliform counts (*E. coli*, *Salmonella*), total dissolved solids (TDS), and heavy metal concentrations (e.g., Fe, Pb) against WHO and Nigerian Drinking Water Standards.

- **Surface Water & Watershed Monitoring:** COOU academics conduct field assessments on regional streams and river basins in Anambra State (such as stream quality assessments in neighboring LGAs) to study the impact of agricultural runoff, solid waste leachates, and micro-pollutants on local freshwater ecosystems.

- **Wastewater Treatment & Remediation Studies:** Departments explore low-cost, eco-friendly biosorbents and filtration technologies for industrial and domestic wastewater treatment to reduce chemical discharge.

4. Community Outreach & Town-and-Gown Stewardship

- **Off-Campus Student Housing Audits:** COOU academic departments engage with private student lodge operators around Uli and Igbariam to evaluate water safety, recommending chlorination and proper borehole positioning away from septic pits and waste sites.

- **Advisory to Local Communities:** Research findings on groundwater quality and sanitation risks are shared through community extension programs to educate local residents on boiling, filtration, and safe water storage techniques.

Performance Summary against SDG 6 Targets

SDG 6 Target Area	COOU Operational & Academic Contribution	Impact Level
6.1 Safe & Affordable Drinking Water	Operational borehole networks, storage tanks, and water quality testing across all three campuses.	**High** (Campus & Student Lodges)
6.2 Adequate Sanitation & Hygiene	Maintenance of lavatory facilities, handwashing stations, and sanitation enforcement.	**High** (University Facilities)
6.3 Improve Water Quality & Wastewater Management	Academic research on heavy metal removal, coliform detection, and groundwater contamination mitigation.	**High** (Regional Environmental Health)
6.b Community Participation in Water Management	Extension activities educating surrounding host communities and off-campus housing providers on water safety.	**Moderate to High** (Anambra State Communities)

Strategic Recommendations for Acceleration

1. **Centralize Campus Water Treatment Plants:** Upgrade raw borehole systems to include integrated central reverse-osmosis or automated multi-stage filtration plants at Igbariam, Uli, and Awka to guarantee consistent drinking water purity across all campus taps.

2. **Institute Digital Real-Time Water Quality Monitoring:** Deploy smart sensors across campus storage tanks and distribution lines to continuously measure pH, turbidity, and contaminant levels, feeding live data into a university environmental dashboard.

3. **Construct Greywater Recycling Systems:** Implement small-scale greywater recycling units at campus residential blocks to reuse laundry and sink water for landscaping, cooling systems, and agricultural irrigation, lowering total freshwater draw down.

Signature:  Date: 24/09/2026

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Vice Chancellor