SDG 06

Clean Water Sanitation

Research by Number (2020-2024)

Publication

198

Citation Impact

3.63

Citation Count

2,344

SDG 06
Clean Water Sanitation

6 CLEAN WATER AND SANITATION

(Unpad) has Developed a Smart Pollutant Tracker, an Innovation for Detecting Chemical Waste in Rivers.

Universitas Padjadjaran (Unpad) has developed a Smart Pollutant Tracker, an innovative device designed to detect chemical waste contamination in rivers continuously and accurately. The device operates 24/7, with one unit installed along each monitored riverbank. It features a submerged sensor that transmits real-time data to a central server via the internet whenever pollutants are detected. The collected data are then monitored through a digital application accessible on smartphones and computers, enabling rapid response and effective pollution control. Currently, the detection system is being utilized internally, including by the *Citarum Harum* Task Force, as part of ongoing efforts to restore and maintain river health in West Java.

This innovation contributes directly to Sustainable Development Goal (SDG) 6: Clean Water and Sanitation, which emphasizes protecting water quality and reducing pollution. By leveraging technology to detect chemical anomalies—identified when readings fall below 10,300 kOhm—the Smart Pollutant Tracker enhances early detection and supports evidence-based environmental management. This initiative reflects Unpad's commitment to advancing research-based solutions that safeguard freshwater ecosystems, strengthen environmental monitoring, and promote sustainable water resource management in Indonesia.

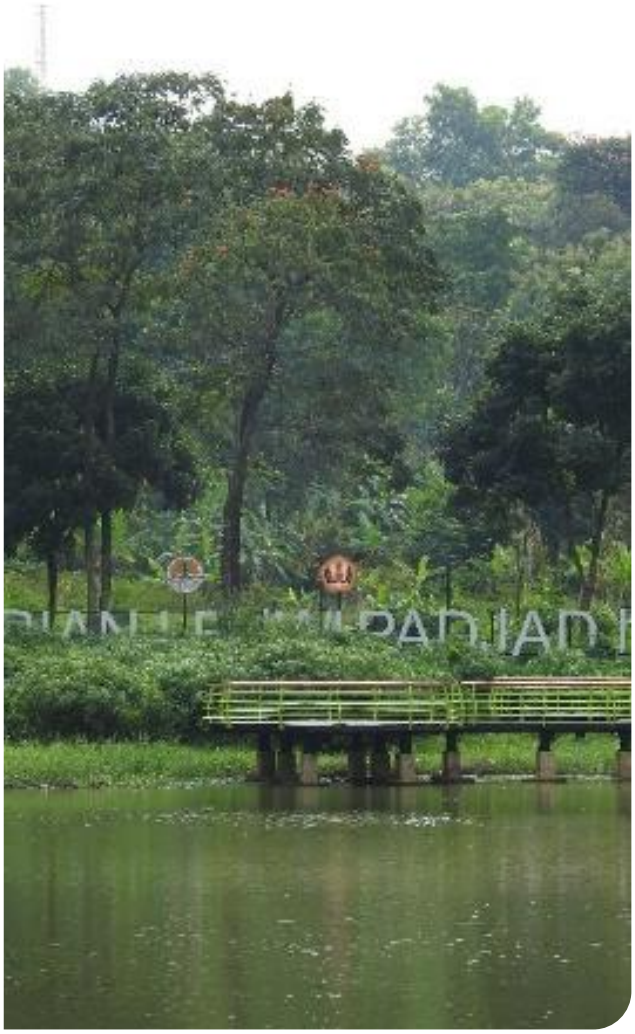
Water Sampling Training

The Center for Excellence in Environment and Sustainability Science (PULIK) at Universitas Padjadjaran conducted a specialized training session on “Water Sampling,” aimed at strengthening participants’ understanding of environmental monitoring and analysis. The program emphasized the importance of mastering accurate sampling techniques to support water quality research and sustainable resource management. This initiative reflects the commitment of PULIK’s Ecology Laboratory—accredited under KAN ISO 17025:2017—to advancing scientific excellence and improving environmental quality, particularly in aquatic ecosystems.

Aligned with Sustainable Development Goal (SDG) 6: Clean Water and Sanitation, the training supports efforts to ensure the availability and sustainable management of water resources. By equipping participants with technical and analytical skills, the program contributes to developing competent professionals capable of addressing challenges in water resource research and management. This initiative also reinforces Unpad’s broader mission to promote sustainability through science-based education, innovation, and environmental stewardship.

Ekoriparian Unpad as a Model of Campus Sustainability

Universitas Padjadjaran continues to strengthen its sustainability initiatives through the development of the *Ekoriparian* facility, which serves as a tangible example of environmental stewardship within the university campus. This facility plays a crucial role in improving indicators related to energy and climate change, particularly in the area of renewable energy development and resource efficiency. The *Ekoriparian* functions as a wastewater treatment system that enables liquid waste to be processed and reused as clean water for downstream applications, such as irrigation and environmental maintenance. By integrating science, technology, and ecological awareness, Unpad's *Ekoriparian* demonstrates how research-based solutions can effectively address environmental challenges while supporting sustainable campus operations.



This initiative reflects Unpad's strong commitment to responsible water management and pollution reduction. Through the implementation of wastewater recycling and carbon emission reduction efforts, the *Ekoriparian* contributes to the preservation of water resources and promotes efficient use of natural assets. Moreover, it serves as a living laboratory for students and researchers to learn about sustainable water systems and environmental technologies. By fostering innovation and practical learning, Unpad not only ensures campus sustainability but also inspires broader community engagement in achieving clean water and environmental resilience.

Water Conservation at Universitas Padjadjaran

Universitas Padjadjaran implements various water conservation initiatives as part of its commitment to environmental sustainability and responsible resource management. The university has developed designated areas for water conservation and rainwater harvesting, designed to collect, store, and filter rainwater for reuse in daily campus operations. This system helps reduce dependence on groundwater sources while ensuring a consistent supply of water for non-potable uses such as irrigation, sanitation, and facility maintenance. By integrating eco-friendly infrastructure with practical water management strategies, Unpad demonstrates how higher education institutions can serve as models for sustainable water use and conservation.

Eemphasizes the sustainable management of water resources and access to clean water for all. Through rainwater harvesting and efficient water reuse systems, Unpad contributes to reducing water waste, mitigating the impacts of climate change, and enhancing environmental resilience within the campus ecosystem. Furthermore, these conservation practices also function as educational tools—providing students and researchers with real-world examples of sustainable water technologies and environmental responsibility. By promoting awareness and action, Unpad actively participates in achieving a cleaner, more sustainable future through integrated water conservation efforts.

Cikahuripan: Drinking Water Stations at Universitas Padjadjaran

Universitas Padjadjaran has installed several *Cikahuripan* drinking water stations across campus buildings as part of its sustainability and health initiatives. These water dispensers provide students, staff, and visitors with free access to clean, safe, and ready-to-drink water. The name *Cikahuripan*, which means “source of life,” symbolizes Unpad’s commitment to promoting health, environmental responsibility, and resource efficiency. By providing accessible drinking water facilities, Unpad reduces the use of single-use plastic bottles and encourages environmentally conscious behavior among the academic community. This initiative also serves as a practical implementation of the university’s environmental awareness programs, emphasizing the importance of sustainable resource management in daily life.

The *Cikahuripan* project focuses on ensuring the availability and sustainable management of clean water for all. Through this initiative, Unpad demonstrates its dedication to water conservation, health promotion, and sustainable campus infrastructure. The availability of safe drinking water not only supports the well-being of the campus community but also exemplifies how higher education institutions can take proactive steps toward achieving water sustainability. By integrating accessibility, innovation, and environmental care, Unpad continues to lead by example in fostering a clean, healthy, and sustainable campus environment.