UNIVERSITY OF ANBAR

WATER CONSERVATION POLICY

The water situation in Iraq reveals several challenges, particularly regarding water scarcity and its impact on urban and rural communities. Urban areas face additional difficulties due to factors such as drought, high-rise infrastructure, population growth, lack of planning, and other natural and human factors. Climate change further exacerbates water supply and resource issues.

To address these challenges, the University of Anbar has implemented a policy focused on water conservation. This policy is aimed at achieving efficient conservation, responsible consumption, and the restoration and retention of surface and groundwater. By encouraging both staff and students to follow this policy, the University of Anbar aims to contribute to the sustainable management of water resources.

In conjunction with these efforts, the University of Anbar is actively assessing the water on campus. This assessment likely involves studying factors such as water quality, availability, and usage in the area. Additionally, the university is evaluating the effluents on all Al-Anbar province main water treatment plants to determine their suitability for drinking and irrigation purposes.

Additionally, the College of Science at the University of Anbar, specifically the Department of Ecology, recently organized a seminar titled "Improving water quality using some physical treatments." During the seminar, the objectives of the study, this involved collecting raw water samples from the wastewater treatment plant at the University of Anbar. These samples were subjected to various physical treatments in laboratory conditions, with modifications made to the experimental conditions to determine the most effective treatment processes. By focusing on water conservation, assessing water situations, evaluating treatment plant effluents, and conducting research on improving water quality, these initiatives aim to address the pressing water challenges in Iraq and promote sustainable water management practices at the University of Anbar.

Prevent contaminated water

To combat water pollution, a team of skilled inventors at the University of Anbar has been assembled to develop remote control-based boats specifically designed for collecting water samples from the rivers surrounding Anbar Governorate. These rivers include the Euphrates, Lakes Rivers, Lake Habbaniyah, Lake Tharthar, and more. Rigorous testing conducted in the rivers of Anbar Governorate has demonstrated the exceptional efficiency of these boats in collecting samples from various locations along the riverbanks. Once collected, the samples are promptly transported to specialized laboratories within the Center for further analysis and experimentation.

In the past, experts from the University of Anbar relied on conventional boats owned by the university to reach remote sampling areas. However, the introduction of these electromagnetic remote-controlled boats has revolutionized the process, significantly reducing energy consumption and voltage requirements. These boats now provide an effective and efficient method for collecting the necessary water samples, enhancing the university's research capabilities in studying and preserving the region's rivers.

Recycling Water

This study by University of Anbar focuses on addressing the issue of pollution in the Euphrates River and its tributaries from wastewater and industrial waters containing hydrocarbons, salts, and heavy metals. To address this problem, the study suggests adopting melting air float (DAF) with primary processing units using locally available and cost-effective natural and mineral materials. The main objective is to effectively remove pollutants from water before they are released into rivers or reused for irrigation, ensuring compliance with international standards.

In addition, University of Anbar implemented a water conservation policy with the aim of achieving a water-neutral campus by 2030. As part of this policy, grey-water and rainwater are collected and stored in ponds

or earth reservoirs. After that, water is pumped to treatment plants where it undergoes purification processes to obtain drinking water. Treated water is then stored in tanks and distributed throughout the university's water system. Much of the water treated for irrigation is used in green areas scattered throughout the university's campus. Furthermore, treated grey water is used as a basic water supply for washing basins and fire spraying systems.

In addition, in recognition of the need for clean water in medical laboratories, University of Anbar has installed units to produce clean water from treated grey-water. These units have the ability to generate clean water suitable for medical and drinking purposes, ensuring a reliable source of high-quality water for daily laboratory operations.

In general, water treated from the DAF system and other purification processes serves various functions on campus, including cleaning, cleaning basins, fire spraying systems, and irrigation. By implementing these measures, University of Anbar aims to mitigate pollution and preserve water.

The Treatment of Wastewater

University of Anbar, as an educational institution dedicated to scientific research and promoting sustainable living, has recognized the critical issue of sewage disposal within the Anbar governorate. The governorate faces significant challenges concerning water pollution and high salinity levels. In response, the University of Anbar has prioritized sewage management and implemented a comprehensive sewage network. This network ensures that all sewage water undergoes thorough purification, with suspended solids effectively removed and the water converted into effluent. Subsequently, the treated water is safely discharged back into the environment outside the governorate, contributing to a sustainable and healthier living environment.

Harvesting rainwater.

Lakes are used as reservoirs to collect rainwater in addition to the aesthetic shape. The university buildings are designed to meet the standards required for their use and isolate rainwater. Buildings have a water grid and connect pipeline networks for rainwater collection from all rooftops. Rainwater is isolated, preserved, and transported by pipes to crops and plants.

University of Anbar Desalination Plant

The Anbar's Province faces a major challenge related to the escalation of water salinity during the summer season. This issue arises from neighboring States implementing policies that restrict Iraq's allocation of water, as they control Iraqi river tributaries. As a result, water levels in rivers have decreased. Salinity fluctuates every year depending on rainfall during Iraq's rainy season. To address this pressing problem, the University of Anbar has initiated a water project and the establishment of a desalination plant. The factory uses the latest technology to produce clean and sterile reverse osmosis (RO) water, which is used exclusively for drinking purposes.

Watering system

At the University of Anbar, an advanced irrigation system comprising drip tubes and sprinklers is employed to safeguard the plants and crops present across the campus. This state-of-the-art watering system ensures effective and efficient watering, providing optimal protection and nourishment to the vegetation.