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From Vision to Metrics: Positioning Australian University-Kuwait for UI GreenMetric Excellence through Digital Transformation

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Abstract. This study evaluates the sustainability readiness of the Australian University – Kuwait (AU) regarding the *UI GreenMetric World University Rankings*. Using a qualitative content analysis of AU's strategic plan and sustainability statements, the research highlights the tangible actions implemented across the six key components: setting and infrastructure, energy and climate change, water conservation, waste management, transportation, and sustainability education and research. Our findings indicate that AU has incorporated tangible sustainability measures in all ranking areas. The most salient initiatives include energy-efficient technologies, smart irrigation, digital transformation to reduce paper use, and partnerships for managing toxic and clinical waste. The university also promotes sustainable commuting through carpooling and bus shuttles. Regarding sustainability education, AU engages the campus community through the organization of seminars, competitions, and international scientific conferences that are gaining wider scope. The study recommends further adoption of advanced digital solutions to enhance the institutional alignment with UI GreenMetric criteria, particularly in water management, thereby building a competitive advantage in the local and regional higher education sectors. This proactive approach is likely to position AU not only for potential ranking inclusion but also as a leader in environmental engagement and digital sustainability in the region.

Keywords:

Australian University – Kuwait, Competitive Advantage, Sustainability, Digital Transformation, UI GreenMetric World University Rankings, Water Conservation.

1. Introduction

Sustainability has gained significant importance in the 21st century due to the rising environmental challenges and the widely recognized need for responsible resource management [1]. Universities, through the management of their campuses, are acknowledged as primary hubs for advancing sustainability efforts. They serve as testing grounds for new ideas and models that could drive broader societal change [2]. Through their actions in different aspects such as the institutional frameworks, research, education, and outreach, universities significantly impact the environment, economy, and society. They are likely to foster a culture of sustainability among the university members and local communities [3]. Thanks to their endowments in infrastructure, diversity and exposure, universities have the potential to reduce their ecological footprint and promote sustainable practices [4].

In this regard, it is crucial to address the unique challenges and opportunities encountered in different regions, particularly those facing severe environmental problems such as water scarcity in arid and semi-arid areas, e.g., countries of the Gulf Cooperation Council (GCC) including Kuwait [5]. The GCC region is facing pressure driven by environmental degradation, excessive urbanization and scarcity of natural resources. Universities in the GCC region play a unique and prominent role in catalyzing sustainable development, serving as open laboratories for environmental innovation, sustainability education, and policy application and testing. The influence of GCC universities goes beyond academic settings to reach surrounding communities, hence making their sustainability endeavors more impactful. While university sustainability – as advocated in the Universitas Indonesia *GreenMetric World University Rankings* (UI GreenMetric) – encompasses a wide array of areas including infrastructure, energy use, waste management, transportation, and education – water conservation holds paramount importance due to its vital nature in desertic climates. Water scarcity is a priority action challenge for all GCC countries disadvantaged by minimal natural freshwater resources and overreliance on costly and environmentally damaging desalination. Consequently, university campuses in the GCC region are increasingly incorporating water conservation solutions into their strategic sustainability plans.

Through the review of UI GreenMetric criteria alignment of a local case from Kuwait, namely the Australian University – Kuwait (AU), our research aims consist of developing comprehensive sustainability strategies, particularly for effective water conservation in such a precarious environmental context, leveraging digital technologies. The research propositions contribute to enhancing sustainability not only on university campuses but also in the wider Kuwait and GCC region.

The manuscript is organized as follows. A literature review is furnished in the following section highlighting the best practices alongside regional adaptations and actionable lessons drawn from case studies in Saudi Arabia, the United Arab Emirates and Kuwait. Next, the research methodology is provided with a case description. Then, the research findings are outlined. Finally, the recommendations for AU are argued, followed by the concluding remarks.

2. Literature Review and Research Questions

2.1. Sustainability Realities on GCC University Campuses

Literature recurrently discusses the need for education and cultural integration of sustainability values. In particular, the importance of awareness campaigns and curriculum

integration was emphasized as these initiatives are determinant for achieving a long-term behavioral change, which appears to be delicate in cultural contexts characterized by conservatism and resource-intensive consumption habits. In addition, the management support as well as the internal policy development, along with staff engagement, were depicted as critical success factors [6, 7]. Nonetheless, it is noted that literature is relatively scarce regarding the implementation challenges associated with sustainability efforts in GCC universities, such as the lack of funding for sustainability initiatives, the absence of reliable measurements for sustainability effectiveness, and the limited awareness. This implies the need for more transparent sustainability reporting and the design of tailored implementation frameworks.

Conversely, the literature largely discussed the importance of waste management and sustainable Infrastructure. Effective waste management systems contribute to campus sustainability by reducing environmental impact and catalyzing the behaviors of the university community in accordance with the values of conservation. A study conducted in Saudi Arabia focused on the introduction of a multidimensional approach including e-learning systems, air dryers in restrooms, and sustainable drinking water solutions. The project helped in achieving a 90% reduction in plastic bottle waste, which contributed indirectly to lowering the levels of water contamination and the difficulties associated with waste disposal [8].

Transportation infrastructure including urban planning represents another crucial area of university sustainability efforts. Drawing on the case of King Saud University's implementation of sustainable transportation systems – such as enhancements to pedestrian infrastructure and parking management – Al-Mosaind [9] asserts that the project significantly reduced air pollution and heat island effects. These effects can influence local microclimates and indirectly impact water evaporation rates and cooling needs.

2.2. Water Conservation in GCC Universities

A considerable number of research focused on exploring the sustainability initiatives implemented across GCC university campuses with a particular focus on water conservation strategies. The review also provides insights about the implementation challenges as well as the optimal ways for the integration of supporting domains such as energy efficiency, infrastructure development, transportation, and education.

A recent empirical study conducted in Kuwait by Mahameed et al. [6] highlighted a growing commitment to sustainability among higher education institutions in the GCC region. Universities have begun implementing a multifaceted approach that addresses water conservation, energy, waste, and transportation. Nonetheless, these efforts appear to be challenged by local conditions such as the desertic nature of the climate and the constraints posed by urban planning. In the same vein, Mahameed et al. [6] evaluated the effectiveness of university-wide sustainability practices related to energy efficiency and paper conservation. They advocated the enhancement of this engagement within Kuwaiti higher education institutions by incorporating sustainability agendas into campus operations. Moreover, the authors stressed upon the importance of initiating internal policy reforms alongside awareness campaigns among faculty and students, specifically in areas that are traditionally characterized by socio-cultural resistance to systemic and behavioral change.

According to Ismaeil et al. [10], water scarcity represents a major environmental stressor in the GCC which compelled several universities to devise innovative solutions. For instance, King Faisal University in Saudi Arabia implemented xeriscaping which is a type of

landscape design that minimizes water use by incorporating native, drought-tolerant plants. Their study claims that xeriscaping reduced water consumption on the campus by 41%. Consequently, they conclude that adapting campus infrastructure to local GCC climate has an important contribution helping in achieving significant resource savings.

Siddique et al. [7] analyzed the multi-pronged water conservation strategy implemented at the University of Sharjah in the United Arab Emirates. The strategy included the installation of efficient water devices, the reuse of greywater systems and promotion of waterless car washes. It also involved conducting awareness campaigns aimed at fostering a culture of resource conservation. Although no numerical data quantified the outcomes of the strategy, the study emphasized the necessity of coupling technological innovation with behavioral and cultural changes to achieve significant sustainability gains.

Alshuwaikhat et al. [5] developed a broader sustainability assessment framework which includes water consumption along with energy use, solid waste and transportation. The study, carried out among several universities from Saudi Arabia, revealed a significant shortage pertaining to the integration of sustainability practices into university management systems. While dimensions other than water conservation were emphasized, the study authors urged GCC higher education institutions to integrate all innovative sustainability initiatives into a comprehensive and coherent strategy.

Alshuwaikhat et al. [11] developed a GIS-based model that supports the evaluation of environmental sustainability on campuses. The model measures different sustainability indicators, namely water use, energy consumption and waste. It uses a spatial analysis approach which is particularly beneficial in the context of large campuses with complex layouts. Although no direct water-saving results were reported in their study, Alshuwaikhat et al. [11] suggested a comprehensive tool for assessing and managing the use of campus resources, hence facilitating data-driven decision-making.

In a review of the case of Universitas Diponegoro in Indonesia, Budihardjo et al. [12] emphasized the critical role of having an integrated water conservation approach that combines various actions such as harvesting rainwater, recycling wastewater, and improving the efficiency of water infrastructure. Such an integrated approach supports campus sustainability by resolving water supply challenges, optimizing energy use and reducing greenhouse gas emissions. The Universitas Diponegoro, Indonesia case shows that the institutional commitment with the community involvement is crucial in establishing a sustainable water management strategy on university campuses [12].

In conclusion, the reviewed literature indicates the growing interest among GCC universities into enhancing their sustainability standing through initiatives that may need to be more innovative and adapted to local climate and cultural context. In particular, water conservation appears to be recognized as a priority domain for GCC universities due to the arid nature of the climate. Successful initiatives such as xeriscaping in Saudi Arabia and greywater reuse in the UAE demonstrate that tangible outcomes can be achieved when locally adapted solutions are implemented.

Moreover, the collected evidence from the literature shows that several sustainability initiatives examined across GCC universities are fragmented without coherent evaluation metrics. Unlike energy efficiency and waste management, water conservation strategies appear to be embedded within broad sustainability frameworks, which demonstrates the need to tailor more adapted and advanced solutions for this specific area. Apart from Mahameed et al. [6], no other study has focused on the Kuwaiti context. Hence, it can be concluded that studies on campus sustainability and in particular water conservation appears

to be in the early stages of development although a significant proportion of GCC universities possess prolific resources that may enable them to implement adaptive and innovative sustainability strategies that are conducive to environmental and societal leadership.

Therefore, the present study aims to fill this gap by offering a comprehensive view of AU sustainability strategies in line with the UI GreenMetric pillars. The study will attempt to address the following research questions:

1. Does AU have an integrated UI GreenMetric sustainability framework that includes water conservation as a core component?
2. Does AU use any quantitative data collection strategies to track its progress regarding sustainability dimensions as per UI GreenMetric framework?
3. To what extent digital tools are embedded into AU sustainability strategies? What digital tools and solutions can boost AU sustainability strategies?
4. Did AU design a locally sensitive awareness program, essentially pertaining to water-focused sustainability action plan?

3. Methodology

This study uses a qualitative content analysis approach to screen and analyze the sustainability practices implemented at AU based on UI *GreenMetric World University Ranking*s framework, including six areas of intervention: (1) Setting & Infrastructure; (2) Energy & Climate Change; (3) Waste; (4) Water; (5) Transportation; and (6) Education & Research. This is a globally recognized framework widely applied in assessing sustainability engagement among universities worldwide.

The use of the qualitative approach in this study will facilitate an in-depth examination of factual and documentary evidence, including long-term strategies devised by the policymakers interviewed at AU. Since the university's sustainability vision is continuously evolving, there are no fully developed quantitative metrics measuring the implementation processes across the six areas. Therefore, conducting statistical analyses is not feasible at this stage.

AU is one of the first private universities in Kuwait, established in 2024, initially under the name of Australian College of Kuwait. The institution offers a total of 24 programs at diploma level (0-2 programs) and Bachelor level (2+2 and 0-4 programs) from different disciplines including engineering, business, aviation, and maritime [13]. Student enrollment is nearly 2700 in the last couple of years.

Specifically, the analysis focuses on evaluating water conservation strategies as reported in the university’s official documents outlining its sustainability efforts. In this regard, the following institutional sources were reviewed:

1. The AU Strategic Plan.
2. The AU Sustainability Statement.
3. Curricula across university programs.
4. Graduation project catalogues and repositories.

These documents were chosen as they contain a detailed description of the university’s formal commitments, priorities, and strategies relating with sustainability. In addition, semi-structured interviews were conducted with selected academic managers from business and engineering colleges (2 from the College of Business, 3 from the College of Engineering). The content analysis applied the following process outlined in Figure 1 below:

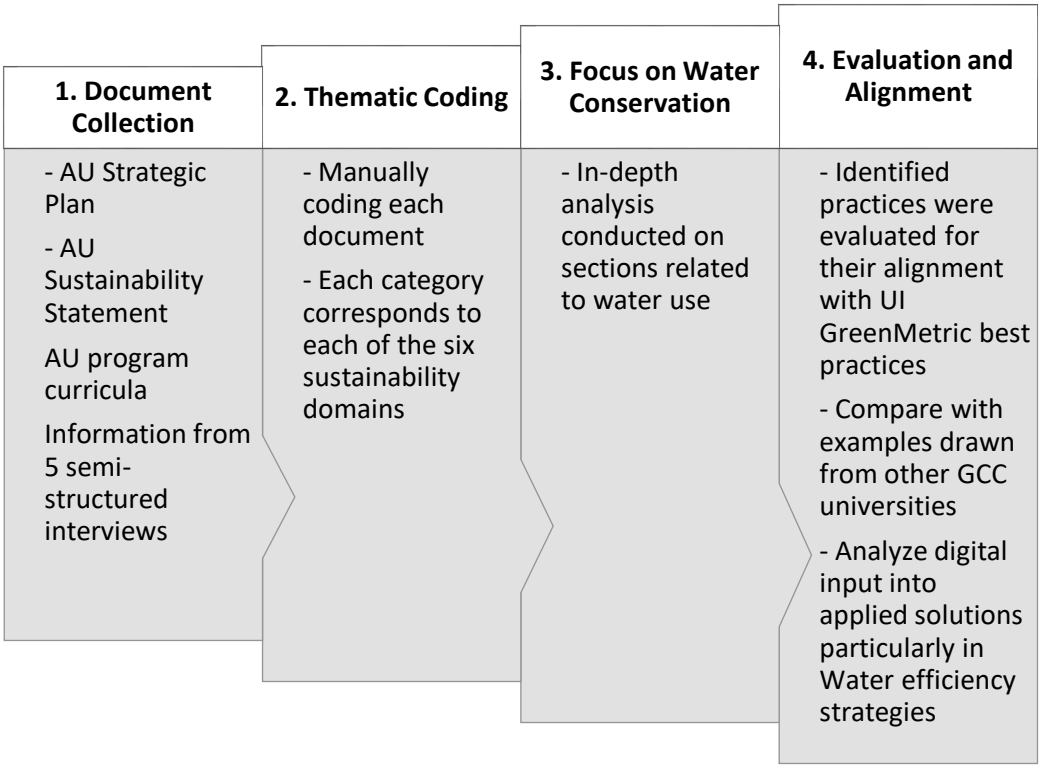

Figure 1. Content analysis process (Authors' work)

4. Results and Discussion

The content analysis of collected evidence revealed a growing emphasis on sustainability practices. As shown in table 1 below which describes the alignment of these practices with the UI GreenMetric criteria, significant sustainability initiatives were undertaken.

Table 1. AU Sustainability Actions as per UI Green Framework (Authors' Work)

UI GreenMetric Component	**Actions taken at AU-Kuwait**
Setting and infrastructure	The AU strategic plan highlights Growth and Sustainability as its first 'Strategic Pillar' in the adopted strategic plan. Goal 1.2. derived from this pillar explicitly stresses the necessity of promoting a sustainable environment for AU. Through Objective 2 stated under Goal 1.2, AU aims to foster a catalytic doctrine grounded in social responsibility which will be integrated across all the operational processes. Similarly, objective 3 under the same goal focuses on maintaining the campus facilities and a developed level of sustainability. The AU campus is situated in the urban area of Mishref in the center of the State of Kuwait, over a total area of approximately 80,000 square meters. The campus is divided into six separate buildings, promoting a healthy walking culture by restricting car use between them.

UI GreenMetric Component	Actions taken at AU-Kuwait

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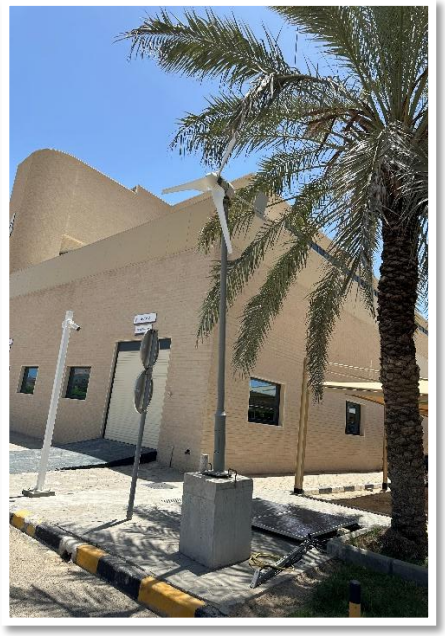
Additionally, the campus contains efficiently placed plantations that are adapted to local climate, thus minimizing the need for frequent watering.

UI GreenMetric Component	Actions taken at AU-Kuwait
	 Photographs by the authors
Energy and climate change	Regarding energy conservation, AU has implemented a comprehensive strategy that includes optimizing lighting systems and using more efficient machines and appliances. In parallel, several awareness sessions are regularly organized for university staff, faculty, and students to encourage the adoption of environmentally friendly habits, such as reducing carbon footprints and practicing responsible energy consumption. Similar efforts to promote sensitivity to environmental awareness are also directed toward the broader community in Kuwait. As shown in the pictures below, AU is showcasing clean energy solutions across the campus including wind turbines and solar-powered stations. Several of these initiatives were developed by engineering students as part of their graduation projects, as well as by engineering faculty members through funded research.

UI GreenMetric Component	Actions taken at AU-Kuwait
	   Photographs by the authors The College of Engineering has partnered with a local provider to establish a solar energy training laboratory on AU campus. Through hands-on experiments using dedicated equipment such as solar panels and inverters, the facility will enable students to engage directly with solar technology and acquire knowledge in energy production and management.
Water conservation	According to AU's sustainability statement, water conservation is a primary concern, recognizing the vital importance of this resource to the nation. AU has implemented an integrated water conservation approach, which includes the installation of water-efficient fixtures in all wash areas with low-flow nozzles and timed-based taps. Each restroom across all buildings and floors is assigned a dedicated janitor who is responsible for the regular inspection of these facilities and the timely

UI GreenMetric Component	Actions taken at AU-Kuwait
	reporting of any water leaks, fixture malfunctions, and any other maintenance issues to the Facilities Department. This strategy ensures that any potential problem is promptly detected and addressed, thus reducing water wastage and preventing serious damages. The cleaning of all campus buildings is conducted using eco-friendly methods that minimize water consumption, such as microfiber cloths and water-efficient equipment. This approach significantly reduces the reliance on traditional water-intensive cleaning practices. Additionally, smart irrigation systems were implemented across the campus green spaces with optimized irrigation schedules. These irrigation systems automatically adjust the watering according to the surrounding environmental conditions, which helps preventing overwatering. In terms of landscaping, AU prioritizes native and drought-tolerant plants, which are likely to minimize usage and better suit the local climate.  Photograph by the authors
Waste treatment and recycling	AU's sustainability strategy strongly promotes waste management, particularly through a decentralized printing unit operated by an external provider. The collaboration terms include the collection and recycling of disposed paper and plastic. Dedicated bins are placed beside each printer installed in all buildings on every floor, clearly labeled as shown in the picture below. In addition, the assessment validation process has been fully digitalized with e-signatures exchanged via email. This replaced the long-standing practice of submitting paper documents for approval. In the same sense, the College of Business only requires one exam — either midterm or final — reducing the need to print paper copies. The assessment policy also encourages project-based learning across all university colleges and departments, which eliminates the requirement for students to submit paper reports. The digital transformation supporting paper waste reduction at AU is further enhanced by the use of interactive SMART TVs and Microsoft Teams in classrooms. These tools enable faculty members to conduct paperless activities, share annotations in real time, and exchange information with

UI GreenMetric Component	Actions taken at AU-Kuwait
	students efficiently. This strategy reduces the reliance on printed materials in the classroom and promotes a more interactive and sustainable learning environment. AU has established e-library services and operates an e-bookstore managed by local partners who coordinate departmental textbook requests directly with publishers. For instance, the College of Business initiated a collaboration with a renowned British publisher to promote the integration of its online platform into a significant number of courses, hence facilitating paperless course design, distribution, and evaluation of assessments.  © Australian University - Kuwait Finally, a comprehensive toxic waste management system is in place at AU Labs. The waste generated by laboratory experiments is safely processed in collaboration with local recycling firms. The expertise of these partners ensures the professional handling of these materials, thereby neutralizing any potential harm to the environment and the university members. A similar system exists for waste disposal at the AU clinic. Specifically, the pharmaceutical waste is carefully collected and disposed of by a local cleaning company to prevent any hazardous handling of unused medications.
Transportation	AU encourages sustainable transportation within its community by promoting carpooling options for students and staff. Unlike other universities in Kuwait, which expand parking facilities, often through multi-storey structures, AU has chosen not to invest in such infrastructure. Instead, it actively encourages students to use carpooling and public transportation, despite this approach contrasts with the local deep-seated habit of driving personal vehicles. Additionally, AU further supports sustainable transportation by allocating bus services for students organizing or participating in off-campus activities such as job shadows and competitions.

UI GreenMetric Component	Actions taken at AU-Kuwait
	 © Australian University - Kuwait
Sustainability education and research	In addition to the courses that embed sustainability as a core topic, e.g., BHRM410: Contemporary issues in HRM, the College of Engineering at AU – through the Department of Petroleum and Renewable Energy Engineering – has submitted to the *Private Universities Council* of Kuwait (PUC) a proposal for a new Diploma and Bachelor 2+2 programs in Renewable Energy Engineering. Moreover, the College of Engineering strongly promotes sustainability as one of the primary themes for graduation project groups. In this regard, the review of the project descriptions developed and presented by engineering students in the academic year 2024-2025 shows a salient emphasis on sustainability. A few examples are provided below with a particular emphasis on water conservation solutions: - Atmospheric water generator using solar energy. - The role of climate teleconnections in desertification across the Arabian Peninsula. - AI-driven RC boat for water quality monitoring and surface cleaning. - Smart fire extinguishing system. - Design and implementation of -in-river water turbine. - Enhancing agricultural sustainability in Kuwait by converting waste into bioenergy within a circular economy. - Augmentation system for vertical axis wind turbine. Business students participate in the “CSR Event” which is part of Management Principles course – a college core course. The event is held each semester, and rewards student ideas that offer innovative solutions for sustainability. AU strives also to organize and host various events such as seminars and competitions that illustrate its community commitment to sustainability. In November 2023, AU organized an international academic conference on ‘*digitalization, innovations and sustainable development*.’ Another international conference will be co-organized with international partners in February 2026 on the following topic: ‘*Harnessing AI, Humanoid Robotics, and Human-Machine Collaboration for Sustainable Growth in the MENA and GCC countries*.’

However, given Kuwait’s severe water scarcity challenges, this paper will place the strongest emphasis on the water conservation. Specifically, recommendations will be

formulated for AU, leveraging innovative digital tools to optimize the use of water resources. An overview of the current water conservation practices at AU, i.e., installation of water dispensers; timed irrigation systems and water taps, use of fully dedicated workforce, reveals that the institution is in the early stages of integrating smart water management technologies, considering emerging global practices implemented on campuses. The existing initiatives, although commendable, are relatively mechanically driven and dependent on human input with insufficient integration of advanced digital water management technologies. Considering Kuwait's arid climate and the increasing environmental demands on universities, it is important to seek further alignment with UI GreenMetric leading regional institutions. To this end, the following technology-driven strategies are recommended:

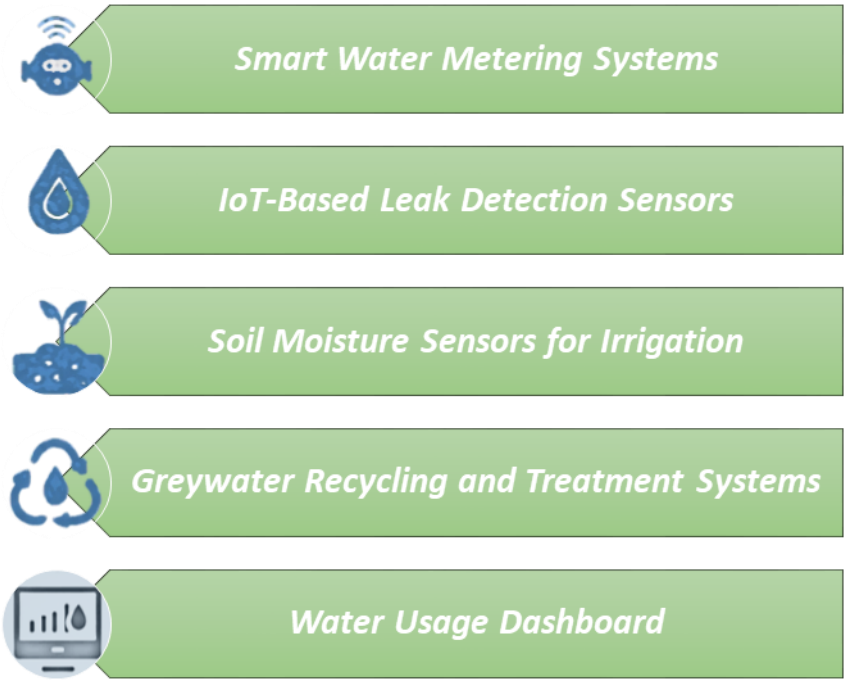


Figure 2. AU digitally enhanced water conservation system (Authors' work)

4.1. Smart Water Metering Systems

Using real-time data analytics, the system monitors water usage across various campus green zones and facilities, such as restrooms to detect leaks and areas of excessive consumption. This system will allow timely maintenance as well as a more informed decision-making [14]. Smart irrigation controllers contribute to water savings ranging from 30% to 51% [15]. In arid environments, these tools can achieve up to 25% of water economies in comparison to traditional irrigation techniques in agriculture [16].

4.2. IoT-Based Leak Detection Sensors

The installation of Internet of Things (IoT) sensors in restrooms and other facilities across the campus can help in automatically and immediately detecting water consumption anomalies that would go unnoticed in traditional systems. These tools are particularly useful in large buildings or campuses where traditional detection methods are difficult to implement, as is the case at AU [17]. According to Muthulakshimi et al. [19], sensors should be installed across the entire water distribution system to gather information on water flow,

quality, pressure and usage cycles. Collected information is transmitted and integrated into a central server to guide any necessary actions.

4.3. Soil Moisture Sensors for Irrigation

AU can transition to soil moisture-based irrigation systems instead of relying on timed systems. Lawn and vegetation watering system will be activated when soil moisture levels fall below specific threshold. This approach ensures water is used efficiently based on actual needs of the plants. The use of these irrigation sensors is highly recommended in arid countries such as Kuwait to maximize water savings [20, 21].

4.4. Greywater Recycling and Treatment Systems

Lightly used water collected from sinks and ablution facilities can be treated and reused for flushing and irrigation, thereby reducing freshwater consumption. Greywater routing can be managed through smart controllers that will assess its quality and determine appropriate usage patterns [22, 23, 24]. Artificial intelligence (AI) can enhance the recycling of laundry wastewater, particularly in the treatment of micropollutants [24]. The water usage for laundering sportswear of AU sport teams can be significantly reduced by the installation of such advanced water treatment systems.

4.5. Water Usage Dashboard as User Awareness Tool

AU can install digital dashboards that should be visible to students and staff to raise awareness by displaying real-time water consumption metrics [25]. Despite the ongoing challenge of educating stakeholders, these business intelligence dashboards enhance decision-making and improve the efficiency of water resource management [26]. In a subsequent phase, gamified challenges or competitions can be designed and implemented to encourage collective behavioral changes regarding water usage within AU community.

The implementation of our proposed digitally enhanced strategy can begin in pilot zones at AU that are characterized by high traffic and usage, and gradually expanding based on continuous cost-benefit analyses and technical adjustments. The system could be integrated with energy-efficient sources to create a holistically sustainable university model, leading to a more substantial competitive advantage for the institution in the region. Some of these practices could be benchmarked against successful regional practices as exemplified by the University of Sharjah's greywater reuse program.

In response to the research questions outlined above, AU appears to have a comprehensive sustainability strategy that aligns – to some extent – with the UI GreenMetric framework and regional practices (e.g., xeriscaping at King Faisal University). However, AU's strategy lacks quantitative measures to track the effectiveness of its sustainability action plans, which represents a major area for improvement. By leveraging the suggested digital tools and integrating them into the overall sustainability strategy, AU can accurately monitor water consumption and secure an advanced sustainability position within the local and regional education sectors. Regarding water conservation, AU can achieve regional leadership by adopting the proposed strategies outlined in Figure 2 above. In parallel, a strong and well-tailored awareness promotional campaign is required to reinforce water conservation as a primary component of the institution's brand image. Finally, participating in the *UI*

GreenMetric World University Rankings will further enhance the university's exposure to successful sustainability practices worldwide and potentially foster rewarding partnerships within this network.

5. Conclusion

This study discussed the growing importance of embracing digital transformation to enhance sustainability at GCC universities. The case of AU demonstrates both existing winning practices and untapped potential for technological innovation in water management. The overview of AU as an example illustrates that GCC universities need to undertake bolder actions regarding water conservation, focusing on advanced and digitally integrated solutions. Water conservation is a vital matter for local economies, requiring domestic universities to catalyze national efforts to achieve substantial results. Specifically, AU's alignment with UI GreenMetric standards and global best practices can enable the institution to pioneer university water conservation initiatives in the GCC region. Such engagement could translate into a sizeable competitive advantage that would demarcate AU from other Kuwaiti universities.

Moving forward, this strategic shift should be reflected in the programs offered and the research conducted at AU. This differentiation is particularly valuable in the Kuwaiti higher education sector, where institutions often offer very similar academic programs. For instance, the engineering programs can leverage smart digital tools to suggest modules on water-efficient design, desalination technologies, greywater recycling, and smart irrigation systems. The Management Information Systems program offered by the College of Business can incorporate water management applications into the courses related to Internet of Things (IoT), AI or machine learning.

Finally, a strong commitment to sustainability could enhance AU's appeal to students with high environmental awareness, as well as to researchers and international partners. This could also result in promising funding and collaboration opportunities, further strengthening AU's position in the competitive education market in Kuwait and the GCC.

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Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

Authors Contribution

O.A and **F.A** together conceived the research idea, designed the methodology, and carried out the data collection. **O.A.** conducted the data analysis and interpretation of the findings. **F.A.** contributed to the manuscript writing and critical revision. All authors reviewed and approved the final version of the manuscript.

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