



REPUBLIC OF IRAQ  
MINISTRY OF HIGHER EDUCATION AND SCIENTIFIC  
RESEARCH  
UNIVERSITY OF SUMER

# 2021 Annual Sustainability Report

The Sustainability Director

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[uos.edu.iq/upload/upfile/ar/70.pdf](https://uos.edu.iq/upload/upfile/ar/70.pdf)

## **Preface**

University of Sumer sustainability Report describes which topics with regard to environmental, social and governance issues. The Report is prepared in accordance with the GreenMetric Standards. In relation to the defined material topics reports on its achievements, challenges and progress in sustainability performance made over the year.

Our university Sustainability Report presents up-to-date performance, activities and plans directed on achieving the targets of the Sustainability Strategy. The Report describes UOS performance in the focus areas of sustainability in relation to the Sustainable Indicators and categories of the UI GreenMetric.

Material topics presented in the Sustainability Report are structured around six focus areas on which UI-GreenMetric concentrates its efforts which are:

- 1- Setting and Infrastructure
- 2- Energy and Climate Change
- 3- Waste
- 4- Water
- 5- Transportation
- 6- Education and Research

One of University of Sumer important goals is to be a part of the sustainability project in the special and in the world in general. therefore it involved itself in many organizations and communities that deal with sustainability and natural resources conservation. These organization are distributed locally, regionally and internationally.

our report will divided to many parts according to the areas with the current situation and the recommendation to reach high level in the sustainability.

## **1- Setting and Infrastructure (SI):**

Our university colleges are distributed in seven sites, they have small buildings with poor infrastructure. The reason of that because of the general situation in Iraq. our recommendation for this point is we have we start with our new site of the university that location in the east if Al-Refaae city with an area of 400 Acres and design and build it using the most advanced designs and according to the most high level infrastructure and standards (Figure 1) the Total planted vegetation area was 5722 m<sup>2</sup> (20.1%) so we have to have more planted and green areas to about 40% that mean we should decrease the area to twice.

Also we need to growth and plant big trees to cover more than 30% of the total area.

For the total of the campus population, it is good to decrease the number of the student to be suitable with the open space to be around more than 70 m<sup>2</sup> / person.

University budget for sustainability effort is good and the average percentage of university budget for sustainability efforts is about 19.5% which is so good and means that our university spend more money to be an active organization in the field of sustainability.

Take caring about the special needs people and disabilities in an important side that all universities have to take an action about it, so we should be more active about this subject. We need more parking areas in the colleges parks for them and more elevators in all our buildings. All facilities should be existed in all buildings and are fully operated.

About the Security and safety facilities, Our university have the following parts

- 1-CCTV in entrance.
- 2- Monitoring screen.
- 3-Fire alarm sensor.
- 4-Fire extinguish.
- 5- Fire ball .
- 6- Sand pail.

we should work to include all the above in all sites and improve our system to be available and security responding time for accident. crime, fire and natural disaster less than 10 minutes.

Our health system need to be more advance by having good health infrastructure like big hospital in the main campus or small hospitals in each college.

UOS provides health services through the emergency rooms that distributed in all the university parts and for entire academic staff and students community in addition to the first aid indoor kit boxes in all rooms, classrooms and laboratories.

Our Conservation system consists of two parts, the first one is a green house for planting vegetables for campus residents and an animal house for chicken growth for campus residents which provide a fresh products for the campus population with a supported price. Our plan to increase the quantity and quality of these systems. We looking for expand the numbers and areas

of the green houses and the animal houses. Also, UOS has a plane to open a number of artificial lakes for fish growth.

## **2- Energy and Climate Change (EC):**

Energy efficient appliances are used in our university community and all parts of the UOS using the energy efficient appliances to save the energy for example, insulation, LED lighting and the deployment of sustainable technology.

The number of the installed LED lamp was 600, while the total number of the energy efficient applications was 897, so the percentage is 66.8%. The number of the installed LED bulbs was 860, while the total number of the energy efficient applications was 1813, so the percentage is 46.8%. The number of the installed fans (ceiling and wall) was 500, while the total number of the energy efficient applications was 745, so the percentage is 53.5%. The average percentage of the energy efficient applications was 55.7%. According to this percentage, we have to increase the type and number of these application to reach the percentage of >75%.

UOS has to start establish smart buildings. Also, our university has to use the renewable energy such as solar energy and wind energy, both of these sources are applicable in our environment. We have a hot and dry summer and have open areas out of the cities and are suitable for establishing wind fans.

Annually, all our university sites use about 852000kWh. so we still around the preferred personal usage ratio which is <279kWh. This electricity is used for lighting, cooling, heating and laboratory appliances

there are four programs is our university to reduce the emission of the greenhouse gases as below

- 1- There is a program that deals with reduce the fugitive emission which is reduce the number of refrigerators and using the small water cooler.
- 2- reduce the private cars and use shared cars which are already parked out of the university buildings.
- 3- Shutting down most of the electrical devices after the work hours which are after 2:30 PM.
- 4- Give a rest for the electricity generations during their works for cooling.

The Total Carbon Footprint (CO<sub>2</sub> emission in the last 12 months, in metric tons) is

$$\begin{aligned}\text{CO}_2 (\text{electricity}) &= ((\text{electricity usage per year (kWh)}/1000)*0.84 \\ &= ((851750 (\text{kWh})/1000)*0.84 \\ &= 715.47 \text{ metric tons}\end{aligned}$$

CO2 (bus)= 0 metric tons because our university colleges do not have any parking or road for cars, buses and motorcycle and no any vehicles can inter and travel inside the university colleges

CO2 (cars)= 0 metric tons because our university colleges do not have any parking or road for cars, buses and motorcycle and no any vehicles can inter and travel inside the university colleges

CO2 (motorcycle)= 0 metric tons because our university colleges do not have any parking or road for cars, buses and motorcycle and no any vehicles can inter and travel inside the university colleges

CO2 (total)=  $715.47+0+0+0=715.47$  metric tons

Carbon footprint in 2020= 715.47 metric tons

There were many impactful university programs on climate change such as:

- 1- Install group of seismic station which using for monitoring the seismic risk in the area close to the university.
- 2- workshop about the desertification and climate change to give information about climate.
- 3- Training workshops about the hydroponic agriculture which enhance the sustainability.



### **3- Waste (WS):**

University of Sumer uses a local recycling small private shops, which has implemented Single Stream Recycling, allowing students and faculty to easily determine what they can and cannot recycle. Additionally, this program allows all types recyclables (plastic, paper, glass, aluminum) to be placed in different containers. These private shops also promote the recycling of Electronic Waste and ink-cartridges from printers. 1-2- Trash containers and paper shredder machine are available everywhere within the university. 3- Also, the internal GTTC program encourage the students and staff to exchange each 10 Kgs of useless paper with 250 A4 white paper. with these effective programs, more the 75% of the wastes are recycled.

University of Sumer supports paperless system to reduce paper in daily workplace. It can reduce a lot of paper use that mean University of Sumer can reduce CO<sub>2</sub> emissions and save the world, this can be done due:

- 1- Print in A5 size paper instead the A4 paper which mean reduce the paper by 50%.
- 2- Using online system and Electronic Correspondence instead of the hard copy correspondence.
- 3- Using double sided printing, and always recheck your data before print.

We do not using any plastic bags in our educational community.

In the UOS, the organic waste is very little, collects the organic waste can be collected with special containers after that it delivered to the college of Agriculture for treatment.

- 1- Use barrels and bags for fermentation the waste.
- 2- Use the traditional method in the open space for fermentation the waste.

All the organic waste finally will be an organic fertilizers and petmos. These materials will be used for agricultural researches and purposes and for the UOS vegetation areas.

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The toxic and hazardous (chemical and biological) waste and useless printer cartridges in the UOS collected in special containers as a permanently storage. After that all these wastes handled by the agent from the Directorate of Thi-Qar Environment (DOTE)/ Ministry of Environment for treatment, And this task is one of the DOTE responsibility.

All the sewage disposal in the USA is treated conventionally by collected them in a subsurface reservoirs and goes out the university to sewage channels.

#### 4- Water (WR):

Water is a very important part of the university daily life. All buildings of the University of Sumer should have separated sewerage system, for waste water and for clean water (rainwater). We are studying a plan to apply the rainwater harvesting, it need a financial support. Rain water can collected from the roofs of the buildings and is then discharged into the local ponds and canals around the buildings. till this moment, the university has not any buildings where all the rainwater is collected for toilet flushing and for watering the plants inside the building. At our campus we have a separate sewerage system. We collect rainwater from the roof, parking area etc. and discharge this in the sewage channels out of our campus.

RO system to treat drinking water, Also this water can be used for chemical experiences in the college laboratories. the low quality water can be used for irrigation, Toilet use, and for car washing. This can be helpful to recycle the water.

Some examples of water conservation measures include (garden sprinklers) which can reduce the irrigation water. the total number of them are 80 and the Total number water efficient appliances is 80 (100%).

Also, RO system to treat drinking water, Also this water can be used for chemical experiences in the college laboratories. This treated water is consumed by student and staff

During COVID-19 pandemic, and to keep the campus population healthy, we increased the percentage of additional handwashing and sanitation facilities. Disinfectant chambers provide on the campus main gate and several faculty buildings. Meanwhile we have handwashing facilities placed inside every buildings and hand sanitizer containers place beside the handwashing facilities. Many new handwashing facilities were installed. recently, we added 3 Disinfectant chamber and 40 additional handwashing Facilities. total number of facilities/total number of buildings)=  $43/10=3.4$

## 5-Transportation (TR):

The total number of vehicles (cars and motorcycles) is so small because our university is a small and closed university. we have just 38 cars and no cars and neither motorcycle entering the university. this is a good indicator to make our university (partially) green at this point.

so the ratio of the total number of vehicles / total campus' population =  $38/3407=0.011$  that mean it less that 0.045 which is the perfect ratio in this criteria.

Shuttle service is partially provided by the university according to the college budget. For the students that stay in the university housing, the shuttle service is available and free. In other hand, the student that live far of the colleges, the travel service is not free and provided by other parties. Sometimes the university contributes a part of the cost for students and staff. the total number of shuttle services in the university is 5 and the average number of passengers of each shuttle is 10 passengers while, the daily total trip for each shuttle is 4 trips.

All University of Sumer sites are cyclist and pedestrian friendly. No any internal roads. Many close living students come to the university by bicycles. the private bicycles can inter the university sites.

The parking area in the UOS sites is so small because, as we mentioned before, all the sites are small and just have places for the high position staff cars.

Total main campus area:  $28428 \text{ m}^2$

Total parking area =  $210 \text{ m}^2$

Ratio = 0.0078 this is a perfect ratio.

To limit and decrease the parking area on campus, our university did the following:

- 1-Offer students housing which already lead to limiting their private cars number which mean limiting the parking zone for students.
2. Offer academic housing that lead to limiting their private cars which mean limiting the parking zone.
3. Offering sharing cars for students and staff which decrease the parking areas.

We offered Shuttle/bus campus service to our students, academic and administrative staff to decrease private vehicles on campus.

The pedestrian paths one campus are available and designed for safety.



## **6-Education and Research (ED):**

Number of Courses/Subjects Related to Sustainability Offered in our university because of the policy of our ministry of higher education and scientific research. The total number of courses with sustainability embedded for courses running in 2020 was 109 courses out of 835 total courses. All these courses in fully with the sustainability subject such as (soil environment) and (environment and pollution) or included chapters of essays about the sustainability and related subjects. there is an increase growth in the academic courses from the 2017-2018 to 2019-2020 academic years. They were 790, 800 and 835 for 2017-2018, 2018-2019 and 2019-2020 respectively.

Total research fund dedicated to sustainability research in 2018, 2019 and 2020 was 30000 \$, 40286 \$ and 40286 \$ respectively. The averaged annum last 3 years of research fund dedicated to sustainability research = 110572 \$

While the total research fund in 2018, 2019 and 2020 was 101114 \$, 150000 \$ and 165000 \$. The averaged annum last 3 years of research fund = 416114 \$

We are looking for increasing the overall funds and the sustainability research funds to improve our sustainability researches.

The Number of scholarly publications on sustainability for our research and academic staff for the past three years was 25 scientific researches. Actually. this is not good numer and we have ti increase it to more than 300. The below links are the Google scholar accounts for the UOS researchers and academics that have researches on sustainability, environment and pollution.

below the links of these researches

<https://scholar.google.com/citations?user=PqWDs-gAAAAJ&hl=en>

<https://scholar.google.com/citations?user=AFpIC8cAAAAJ&hl=ar>

<https://scholar.google.com/citations?hl=ar&pli=1&user=YPNn17sAAAAJ>

<https://scholar.google.com/citations?user=NeKu9dkAAAAJ&hl=ar>

[https://scholar.google.com/citations?view\\_op=list\\_works&hl=en&authuser=1&hl=en&user=2YLTZRgAAAAJ&authuser=1&gmla=AJsN-F7ErL3u38TynXdEMpTkLF6PpkHcQeTUaczubdX\\_DWJ5FG9-YW9oOkjbav6ypn7wHs5sdljZZ1kxrr2s4\\_87MQPTPxchwDQNaEbiq8\\_j0\\_P94i3\\_gQ&sciund=4580217002824611545&gmla=AJsN-F4y-U5cGxhbmEYFaerMqYwfwBOKN6zNrMwN74HCkQJ7aDFUOalUa9mr24vQzfw\\_HbFM\\_KuR9w9oj9Cm3wm-nuMNsuljB-ec\\_oHyjY-IU8ZwanjaEo&sciund=3048378869985107132](https://scholar.google.com/citations?view_op=list_works&hl=en&authuser=1&hl=en&user=2YLTZRgAAAAJ&authuser=1&gmla=AJsN-F7ErL3u38TynXdEMpTkLF6PpkHcQeTUaczubdX_DWJ5FG9-YW9oOkjbav6ypn7wHs5sdljZZ1kxrr2s4_87MQPTPxchwDQNaEbiq8_j0_P94i3_gQ&sciund=4580217002824611545&gmla=AJsN-F4y-U5cGxhbmEYFaerMqYwfwBOKN6zNrMwN74HCkQJ7aDFUOalUa9mr24vQzfw_HbFM_KuR9w9oj9Cm3wm-nuMNsuljB-ec_oHyjY-IU8ZwanjaEo&sciund=3048378869985107132)

<https://scholar.google.com/citations?user=3sSflxkAAAAJ&hl=en>

[https://scholar.google.com/citations?user=QrI\\_\\_g4AAAAJ&hl=en](https://scholar.google.com/citations?user=QrI__g4AAAAJ&hl=en)

There are tens of the events related to environment and sustainability hosted or organized by the University of Sumer in the academic years from 2018 to 2020.

Total number of sustainability/environment related events in:

2018: 30

2019: 35

2020: 42

UOS just has one student organizations Related to Sustainability, its name is (from desert to garden)

You can find the complete text of University of Sumer 2020 Annual Sustainability Report available on this link [70.pdf \(uos.edu.iq\)](#). This report has the final sustainability status of our university.

About the Number of cultural activities on campus (e.g. Cultural Festival) including virtual activities. UOS has continuous like programs.

Total number cultural activities on campus organized by the University : more than 3 events

- 1- Distribute awareness posers.
- 2- Visite schools and encourage the students about the sustainability distribute small plant .
- 3- Holding many seminars and workshops about the sustainability.
- 4- Holding meetings and cultures about the festival.

During the Covid-19 pandemic , we have Number of university programs to cope this pandemic situation as below:

- 1- Using sterilization room to sterilize the students and staffs, College of Medicine.
- 2- Temperature test to check the staff and students temperature.
- 3- Distribute free masks and gloves for all.
- 4- Sterilize all buildings floors, classrooms, free spaces and gardens by chlorine.
- 5- Awareness posters about COVID- 19 distributed within the UOS facilities.
- 6- Awareness posters distributions for public by the UOS staff and students.
- 7- Asking all the university population to have one of the COVID-19 vaccine.
- 8- Using google classroom for teaching and contacting with the students.
- 9- Using Zoom, Free conference call meeting for virtual meeting and conferences.
- 10- Using WhatsApp and Telegram for contacting and send the homework and discuss the materials.

We should use additional platforms for education and communication such ad blackboard and admodo due to their advanced services.

the number of sustainability community services project organized and/or involving students is 3 which are:

Project name	participants	Project duration	Project area
1- From Desert to Garden	100	The whole year	ED
2- 1 Million Trees	10	The whole year	IS
3- The annual agricultural exhibition	150	2 days per year	ED

**Recommendations:**

- 1- Increase the green areas and the open spaces.
- 2- Decrease the number of the students to be suitable with the buildings area.
- 3-Increase the overall funds and the sustainability support funds, also, encourage staff to publish original papers related with the sustainability and include the words (green, sustainability ...etc) in their papers.
- 4-Expand water recycling programs.
- 5-Expand the renewable energy resources.
- 6-Increase the number of the zero emission vehicles.
- 7-Applied the smart building designs in some sites as a first step.
- 8-Improve and expand the sustainability website and update it continuously.

