

## Template for Evidence(s) UI GreenMetric Questionnaire

University : Alexandria University  
Country : Egypt  
Web Address : <https://alexu.edu.eg/>

### [4] Water (WR)

#### [4.1] Water Conservation Program Implementation



Adopting a mechanism to maintain water pipes to prevent waste resulting from leaks (Alexandria University, Egypt)



Supplying water taps with water conservation units (Alexandria University, Egypt)



Supplying water taps with water conservation units (Alexandria University, Egypt)



**Air conditioning water collection and reuse unit - Faculty of Engineering**



**Wastewater treatment unit at the Faculty of Engineering**



**The sewage water will be treated and reused in the irrigation of green areas in the project (Alexandria University)**



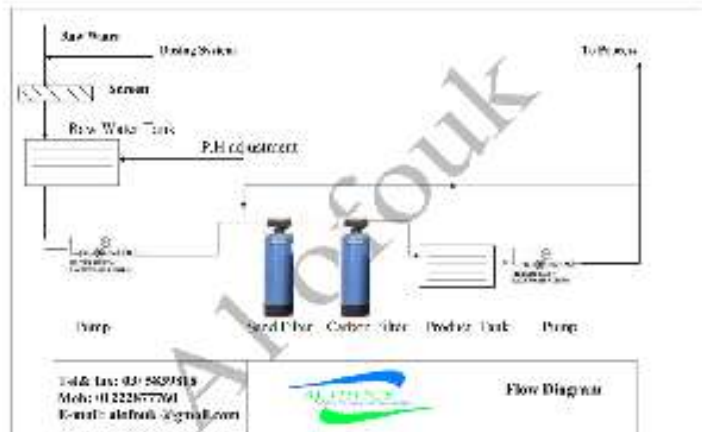
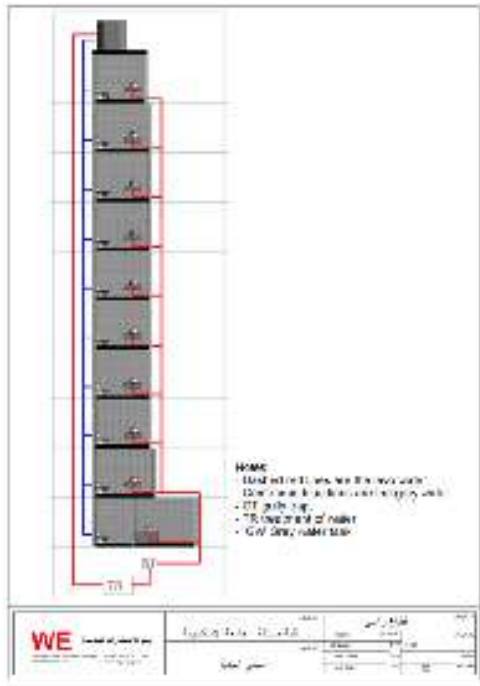
**Innovative Renewable Energy RE-Multi-stage flash system (MSF) with salt precipitator and nanofiltration (NF-MSF) to pre-treat feedwater (RE-NF-MSF). Faculty of Agriculture, Alexandria University**



**A 100 m<sup>3</sup> desalination unit in Wadi Natroun (Faculty of Agriculture, Alexandria University)**



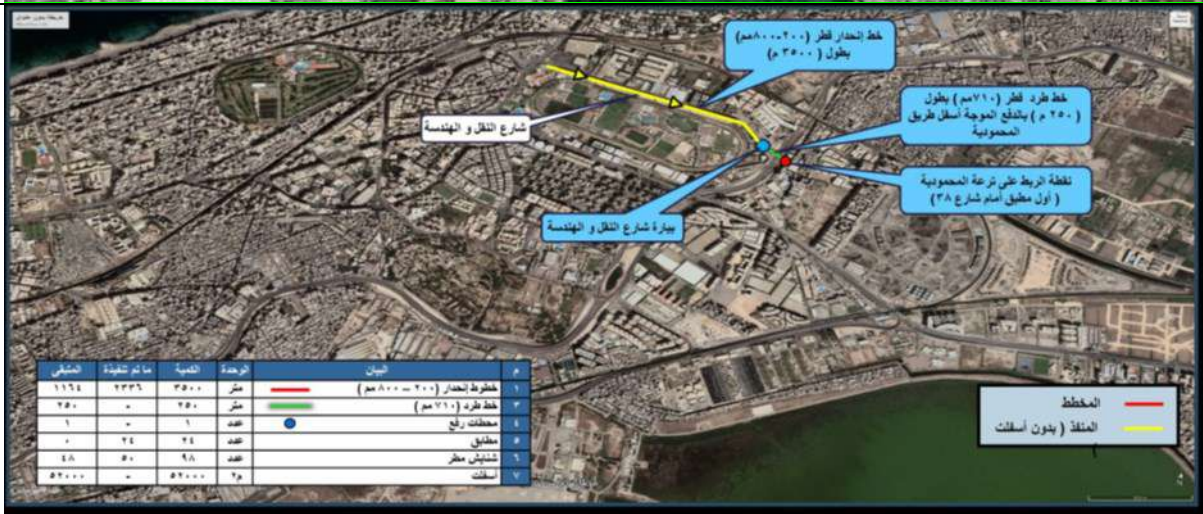
**Recycling wastewater for use in fish farms, Faculty of Agriculture, Alexandria University.** Which consists of eight ponds (one and a quarter acres/each) in the Abis area. Alexandria University also used recycled water to grow crops at the Agricultural Research Center in Abis.



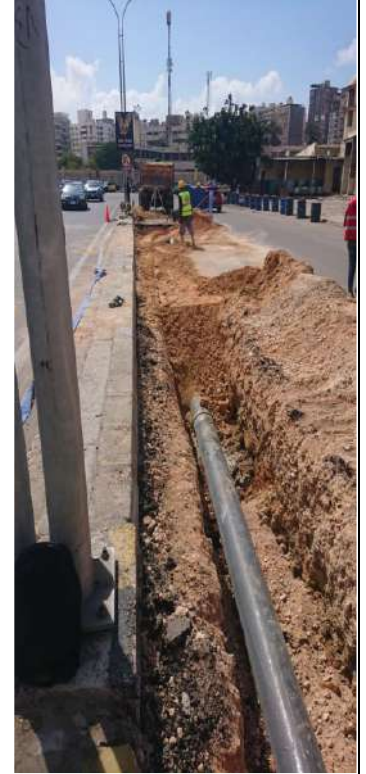
## Rooftop Cultivation



**Grey water recycling system organized by Faculty of Pharmacy (Alexandria University, Egypt), and reused in rooftop cultivation.**



**Integrated strategy project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**



**Integrated strategy project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**



**Integrated strategy project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**



**Before performing the integrated strategy project**



**After performing the integrated strategy project  
Mahmoudiyah Axis Project before and after performing the project**



Raising awareness among university staff about water conservation through seminars and workshops organized in collaboration with Alexandria Drinking Water Company at the Faculty of Science.



**دعوة**  
تحت رعاية

**السيد الوزير اللواء / محمد الشريف**  
محافظ الإسكندرية

**السيد المهندس / ممدوح رسلان**  
رئيس مجلس إدارة الشركة الخافضة لمياه الشرب والصرف الصحي

**يترشح السيد المهندس / أحمد جابر**  
رئيس مجلس الإدارة والعضو المنتدب شركة مياه الشرب بالإسكندرية

**بدعوة سيادتكم لحضور احتفالية اليوم العالمي للمياه تحت شعار "التغلبات المتسارعة"**

**يوم الأربعاء الموافق 15 مارس 2023**  
**الساعة 9 صباحا**  
**بدار أوبرا إسكندرية (سيد درويش)**  
**الحضور بالملايس الرسمية**

**للإعتذار يرجى الإتصال بالأرقام التالية 3910639 - 01284559090**

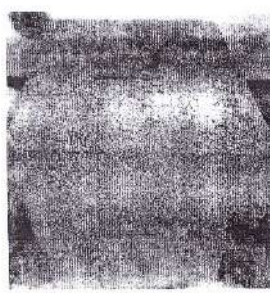
Logos: AMJAD, TMG, and others.

The Staff members from Alexandria University have attended the World Water Day celebration organized by the Holding Company for Water and Wastewater, Alexandria, Egypt.

تقرير جيولوجي عن العينة الصخرية الخاصة بصخر البازلت عمدة رقم 2

الوصف الخارجى للعينة الصخرية

العينة الصخرية هي إحدى أنواع صخر البازلت (يسمى بالترينك بازلت Doleritic Basalt). الصخر له لون رمادي غامق وذي هيئة كتلية صلبة وذي تدرج متناثر (شكل 1).



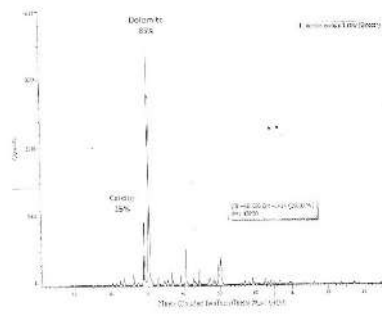
شكل رقم 1: صورة العينة الصخرية

هذا المنتج مثل العينة المذكورة أعلاه وتلخيص الخصائص التي هي متوافقة معها:

أ. عادي جودا صخرى  
ب. عادي اللون  
ج. عادي الشكل  
د. عادي الحجم  
هـ. عادي الكثافة  
و. عادي الوزن النوعي  
ز. عادي التدرج  
ح. عادي التدرج  
ط. عادي التدرج  
ي. عادي التدرج

• التركيب المعنى

من خلال تحليل العينة بجهز حمود أشعة إكس وباستخدام تحليل المسحوق والفرامنه الوصفية تحت الميكروسكوب المستقطب، وكترن المصدر من عينات البازوليت (كربونات الكلسيوم) والمغنسيوم  $[(CaMg)(CO_3)]$  بنسبة 85%، بالإضافة لوجود كمية ضئيلة من الكلسيت (كربونات الكلسيوم  $(CaCO_3)$ ) بنسبة 15%.



شكل رقم 2: تحليل العينة بجهز حمود أشعة إكس بوضع تركب الصخر من معاني الكلسيت والبازوليت.

هذا المنتج مثل العينة المذكورة أعلاه وتلخيص الخصائص التي هي متوافقة معها:

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ي. عادي التدرج

The chemical and physical evaluation of Doleritic Basalt and Dolomite samples for their use in the construction of the western breakwater project under the authority of Damietta Port Authority, to ensure the suitability of the materials used in the construction of the breakwater and to prevent coastal pollution. Performed at the Faculty of Science (Central Lab)






**An environmental impact assessment was conducted by academic members of the Faculty of Science - Alexandria University to evaluate the rate of shoreline erosion caused by urbanization in Alexandria's North Coast region.**




**The faculty members from the Faculty of Engineering are providing engineering consultations and supervision concerning the construction of the Mahmoudiyah road.**



The Faculty of Pharmacy won third place in the Alexandria Governorate for the 2024 National Initiative for Green Smart Projects with its 'Green Sample Cycle' project, competing in the non-profit community initiatives category. This marks the project's second consecutive year of recognition, having previously secured first place last year.



Central Lab  
Faculty of Science



ALEXANDRIA UNIVERSITY  
جامعة الإسكندرية


**تقرير ملاحظة البرج**

This report is made as a demand of El-NASR Saline Company.  
**Sample Type:** One Table salt (Fine-Grained), One kitchen salt (Coarse-grained), and one Brine Solution  
**Sampling Arrival Date:** 9/9/2023  
**Instruments used:**  
 Atomic absorption spectrophotometer (1g salt/100 ml distilled H<sub>2</sub>O), EDX, and conductivity meter.


Test	Results		Units
	Table salt (Fine-Grained)	Kitchen salt (Coarse-grained)	
1- Cu	0.003	ND	ppm
2- Fe	ND	0.011	ppm
3- As	ND	0.208	ppm
4- Pb	0.012	ND	ppm
5- Cd	0.069	0.010	ppm
6- Ca	0.34	0.33	%
7- Mg	0.57	0.74	%
8- NaCl	98.44	98.95	%
Brine Solution			
9- Cu	0.006		ppm
10- Fe	0.018		ppm
11- As	2.77		ppm
12- Pb	ND		ppm
13- Cd	0.0042		ppm
14- Ca	0.49		%
15- Mg	0.87		%

- This report consists of one page.
- These results concern the sample submitted by the supplier.
- These results represent the sample mentioned above, and its representation of other quantities is the responsibility of the company.

Interim Executive Manager of Central Lab  
 Rehab M.I. Elsayed  
 2019170135



Central Lab  
Faculty of Science



ALEXANDRIA UNIVERSITY  
جامعة الإسكندرية

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Interim Executive Manager of Central Lab  
 Rehab M.I. Elsayed  
 2019170135

**Conducting chemical analyses of sea salts used in table salt production to ensure they are free from contamination at the Faculty of Science (Central Lab)**



Regional Studies in Marine Science  
Volume 66, 15 December 2023, 103160

**Shoreline displacement along the Mediterranean coast of Egypt between El-Dabaa – Ras El-Hekma**

Esraa A. El-Masry<sup>a</sup>, Asmaa Magdy<sup>b</sup>, Baher Mahmoud<sup>a</sup>, Ayman El-Gamal<sup>b</sup>, Mahmoud Kh. El-Sayed<sup>a</sup>

**Department of Oceanography, Faculty of Science, Alexandria University, Alexandria, Egypt**

Home > SN Applied Sciences > Article

**Water quality indices as tools for assessment of the Eastern Harbor's water status (Alexandria, Egypt)**

Research Article **Alaa A. El-Dabhar**  
Volume 5, article  
**Faculty of Agriculture (Saba Basha), Alexandria University, Alexandria, Egypt.**

Download View author publications You can also search for this author in PubMed | Google Scholar

Wagdy Labib, **Alaa A. El-Dahhar**, Shimaa A. Shahin, Mona M. Ismail, Shimaa Hosny & Mohamed H. Diab

Egyptian Journal of Aquatic Biology & Fisheries  
Zoology Department, Faculty of Science,  
Ain Shams University, Cairo, Egypt.  
ISSN 1110 – 6131  
Vol. 28(4): 221 – 242 (2024)  
www.ejabf.journals.ekb.eg

**Monitoring of Microplastics in the Marine Environment and Their Ecological Risks; the Coastline of Alexandria, Egypt as a Case study**

**Nourhan Handy, Amany M. Osman, Hassan Awad, Nashwa A. Shaaban\***  
Oceanography Department, Faculty of Science, Alexandria University, Egypt  
\*Corresponding Author: [Nashwa.shaaban@alexu.edu.eg](mailto:Nashwa.shaaban@alexu.edu.eg)

Alexandria Science Exchange Journal

Home Browse Journal Info Guide for Authors Submit Manuscript Contact Us

**Sustainable Water Research Funding and Water Quality Challenges in Agricultural Practices: An Economic Analysis in Egypt**

Document Type : Original Article

Authors  
**Economic and Agribusiness Department, Faculty of Agriculture, Alexandria University, Alexandria 21345, Egypt**  
**Respiratory Engineering Department, Faculty of Engineering, Alexandria University, Alexandria 21344, Egypt**

10.21608/ASEJAIQJSAE.2023.316410

**Researchers at Alexdria University are conducting studies to conserve the marine environment near the university campus**



الصفحة الرسمية لشركة الصرف الصحي بالإسكندرية



الصفحة الرسمية لشركة الصرف الصحي بالإسكندرية



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الصفحة الرسمية لشركة الصرف الصحي بالإسكندرية

**Raising awareness among Alexandria University students about wastewater treatment was achieved through summer training activities conducted at Alexandria Sewerage for students from various faculties, including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, Mapping, and GIS), and Fine Arts (Architecture), September 2024.**



**The Center of Excellence for Water at Alexandria University is organizing a training program for scholarship students in collaboration with EPROM Company. This initiative aims to equip students with practical skills in water management including training courses about Water Treatment for Industrial Applications, and Wastewater Plant Operations and Troubleshooting, ensuring they are well-prepared for the business sector and aligned with labor market requirements (March, 2024).**





Students from the Faculty of Sport Education at Abu Qir took part in a week-long initiative to clean the eastern harbour of Alexandria, starting on July 8, 2024. The initiative aims to promote sustainable tourism, improve waste disposal practices, and raise awareness about the dangers of plastic waste to marine life, while encouraging recycling efforts and maintaining clean beaches. The project included the Alexandria university, El-Raml Rotary Club, and the Egyptian Diving and Rescue Federation.





Students from various schools in Alexandria, alongside those from the French Institute, participated in a large-scale cleanup campaign at Anfouchi beach titled “Our Sea is Clean Without Trash 🌿🌊.” Following the cleanup, participants explored the process of transforming plastic waste into usable materials through 3D printing at the Fab Lab at Alexandria University. This initiative is part of the "Circular Economy: From the Beach to the Lab" project, led by the French Consulate and the French Institute, with financial backing from the European Union and collaboration with the Alexandria Governorate. The project aims to foster partnerships for sustainability and actively engage the local community in environmental efforts.

### Description:

#### Alexandria University program to decrease the water consumption in its faculties and buildings:

Campus water use is an important indicator in the sustainability scale. The aim is to urge universities to reduce water use, increase water conservation programs, and protect the environment. Among these criteria:

- The water conservation program,
- The water recycling program
- The use of water-saving equipment
- The treatment of wastewater

1. The University has applied a strategy in the faculties to decrease water consumption through installation of special parts on water taps, showers, toilette and bathroom bidet which can conserve about 50% of water consumption.
2. Water saving devices are used instead of traditional devices. For example, the use of a hand-washing faucet with automatic control via a sensor, and high-efficiency bathroom devices. Supplying water taps with water conservation units.
3. Adopting a mechanism to maintain water pipes to prevent waste resulting from leaks.



4. Adopting plans and mechanisms for maintaining the taps and internal supply networks of the university to prevent water wastage.
5. Air conditioning water collection and reuse unit in Faculty of Engineering.
6. Wastewater treatment unit at the Faculty of Engineering
7. Providing a sewage treatment plant at the university to make it suitable for irrigating green areas and gardens inside the university campus.
8. Innovative Renewable Energy RE-Multi-stage flash system (MSF) with salt precipitator and nanofiltration (NF-MSF) to pre-treat feedwater (RE-NF-MSF) by Faculty of Agriculture, Alexandria University
9. A 100 m<sup>3</sup> desalination unit in Wadi Natroun (Faculty of Agriculture, Alexandria University)
10. The irrigated water supplied to the fish farm at the Agriculture Experimental Research Station of the Faculty of Agriculture is recycled to irrigate the crops, vegetables, and fruits of the land farm. The recycled water is rich with natural fertilizers and enhances the crops production.
11. In addition, the water recycling in Fish Aquaculture of the Faculty of Agriculture, Alexandria University: The water sewage of the Aquaculture of the Faculty of Agriculture, Alexandria University which consist of eight ponds (one acre and quarter/each) in Abis region. Alexandria University used the recycled water for crops culturing in the adjacent agriculture research center in Abis.
12. The use of biochar produced from Agricultural waste and waste Forests in residual removal chlorpyrifos pesticide Imidacloprid is from water agricultural drainage. Cooperation project between the Egyptian Academy of Research Science and Technology and the Czech Academy of Sciences.
13. IOT Pilot Project in Egypt by Shanghai Water Saving Irrigation Corp. Etd performed an automatic controlled irrigation systems IOT project for modern irrigation technology. The company implanted the IOT platform project to irrigate economic crops and facilitate irrigation systems to overcome the water shortage problems in Egypt. This project will be performed in Alexandria University Farm for agroecological farming in Egypt.
14. Raising awareness among university staff and students about water conservation through seminars and workshops organized in collaboration with the Alexandria Drinking Water Company, in order to Strengthen the means of implementation and revitalize the global partnership for sustainable development.
15. The faculty members from the Faculty of Engineering are offering their expertise and advice on the construction of the Mahmoudiyah axis. These engineering consultations may include technical guidance, design recommendations, structural assessments, and other professional input to ensure the project's success, safety, and efficiency throughout the construction process.
16. The Faculty of Pharmacy won the third place in the Alexandria Governorate for the National Initiative for Green Smart Projects in its third edition (2024) with its 'Green Cycle' project, competing in the category of non-profit community initiatives and participations. Notably, this project has now won for the second consecutive year, having previously achieved first place in the Alexandria Governorate last year.
17. Raising awareness among Alexandria University students from various faculties—including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, mapping, and GIS), and Fine Arts (Architecture)—about wastewater treatment was achieved through summer training and periodic visits to the laboratories of the Alexandria Sewerage Company. This effort supports the achievement of the Sustainable Development Goals by enhancing partnerships for sustainable development and fostering collaborations that mobilize and share knowledge, expertise, and technology. The training aimed to provide students with essential scientific skills and practical experience to prepare them for the job market (September 2024).
  - **Faculty of Science:** Theoretical training introduced the role of the Sewerage Company, while practical training involved visits to treatment plants, central laboratories, and lectures on occupational safety and industrial sewage.
  - **Faculty of Arts (Surveying, mapping, and GIS):** Training included surveying applications, urban planning, and the practical use of leveling instruments, total stations, and GPS devices, concluding with lessons on ArcGIS and sewage system design.



- **Engineering Colleges:** Civil Engineering students trained in network renewal and design, while Mechanical and Mechatronics students learned about pump components, welding, and electrical generators, with visits to various workshops.
- **Fine Arts (Architecture):** Students received training on project design drawings and estimating costs.

[https://www.facebook.com/profile/100068944998517/search?q=%D8%A7%D9%84%D8%B9%D9%84%D9%88%D9%85&locale=ar\\_AR](https://www.facebook.com/profile/100068944998517/search?q=%D8%A7%D9%84%D8%B9%D9%84%D9%88%D9%85&locale=ar_AR)

18. The Center of Excellence for Water is organizing a training program for scholarship students. This training is conducted in collaboration between the Water Excellence Center at Alexandria University and EPROM Company to provide a course for a group of students from the Water Excellence Center. This initiative reflects Alexandria University's commitment to equipping its students with practical skills related to water management, ensuring they possess the competencies needed by the business sector while aligning their studies with labor market requirements. The Center of Excellence for Water at Alexandria University has organized a training program for students in the Water Excellence Center Scholarship and the Civil and Environmental Engineering Program. Alexandria University, EPROM Company, and the students are participating in the following two training programs:

- **Water Treatment for Industrial Applications**
- **Wastewater Plant Operations and Troubleshooting.**

19. **Green Cycle project in the Faculty of Pharmacy - Alexandria University**

The project began in October 2022 by organizing a number of events in cooperation between the Community Service and Environmental Development Committee, ASPSA, and the Alexandria Rotary Clubs, under the supervision and organization of Faculty of Pharmacy - Alexandria University.

Also, the faculty is seriously seeking to implement a grey water (wastewater) recycling system that depends on reusing wastewater from sewage basins only (without using wastewater from laboratory basins) by re-pumping it into the flushing bins in the toilets after work. Filtration and primary treatment. The grey water recycling initiative has a significant impact on rationalizing water use.

Also, taking advantage of rainwater for use in irrigation and regulatory operations.

**Alexandria University** have generalized this initiative in some of the faculties of Alexandria University in gradual stages.

20. **Integrated strategy Project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**

Remote sensing technology was used to know the current values of Rain and assess the current situation with the help of satellites. This is done with the help of the following artificial satellites:

- TRMM and GPM are two of the NASA satellites. (Administration National Aeronautics and Space Administration, United States of America)
- NOAA (National Oceanic, Atmospheric, and Space Administration, United States of America)
- NCEI (National Center for Environmental Information in the United States of America)

**Proposed rain management strategy**

A separate network will be created to drain rainwater for the nearest body of water for areas close to the body of water. The first area is the Corniche, where rainwater is collected and discharging it into marine estuaries. The second area is on both sides of the Mahmoudiyah and Beheira axis near the airport. The rainwater is collected and part of it is drained on the canal and the other part on the airport lake. In the third stage of the project, the two projects on the airport lake to exploit rainwater will be linked to the New Delta project. The rainwater will be used to irrigate the crops, vegetables, and fruits in the New Delta.





**21. Elements of Green Building Implementation as Reflected in all new construction and renovation policies in the new buildings in Abis campus:**

- The area of the project is 160 acres, a general site for educational buildings, and 120 acres are complementary activities. The percentage of green areas and lake is about 52% in addition to 25% streets and lanes.
- Water-saving plots are used, which will reduce water consumption by about 30%. The sewage water will be treated and reused in the irrigation of green areas in the project.
- Wastewater will be treated and reused to irrigate green areas in the project.
- Rainwater is collected in the main lake and used for irrigation.
- The use of plants with few water rationed plants to reduce irrigation needs in addition to absorbing quantities of rainwater to reduce the severity of rain spells.

### **Alexandria University program to conserve local marine water**

Alexandria University are working on studies aimed at protecting and preserving the local marine environment located close to the university's campus.

- 1) An environmental impact assessment was conducted by academic members of the Faculty of Science- Alexandria University to evaluate the rate of shoreline erosion caused by urbanization in Alexandria's North Coast region.
- 2) The chemical and physical evaluation of Doleritic Basalt and Dolomite samples is being conducted to assess their suitability for use in the construction of the western breakwater project, under the authority of the Damietta Port Authority. This evaluation aims to ensure the materials used are appropriate for the breakwater's construction and to prevent coastal pollution. The analysis is carried out by the Faculty of Science (Central Lab).
- 3) The Faculty of Science's Central Lab is performing chemical tests on sea salts that are used in the production of table salt. The purpose of these analyses is to ensure that the sea salts are not contaminated with harmful substances or impurities, guaranteeing their safety and suitability for human consumption.
- 4) The researchers at Alexandria University are conducting studies aimed at preserving and protecting the marine environment near the university campus. Their work likely involves investigating factors that may threaten marine ecosystems, such as pollution or habitat destruction, and developing strategies or solutions to conserve and sustain the health of the local marine environment in the Mediterranean.
- 5) On July 8, 2024, the students from the Faculty of Sport Education, Abu Qir, participate in Initiative to Clean the Eastern Harbour of Alexandria. In line with Alexandria University's commitment to community service and under the auspices of Professor Dr. Abdelaziz Konsowa, President of Alexandria University, and Dr. Yasmine Fouad, Minister of Environment, students from the Faculty of Sport Education in Abu Qir participated in a week-long initiative to clean the eastern harbour of Alexandria. The initiative includes the participation of the El-Raml Rotary Club and the Egyptian Diving and Rescue Federation. The initiative aims to promote sustainable tourism and improve beach enjoyment while supporting local communities in enhancing their waste disposal practices. It also encourages citizens to reduce their use of single-use plastic products and increase recycling efforts. Additionally, the project seeks to educate the public on the importance of maintaining clean and healthy beaches, raising awareness about the threats that plastic and chemical waste pose to marine life, as well as focusing on collecting, classifying, and recycling waste to improve the quality of the coastal environment.
- 6) On June 18, 2024, Students from various schools in Alexandria, along with students from the French Institute in Alexandria, collaborated with Alexandria University to participate in a large-scale cleanup campaign titled "Our Sea is Clean Without Trash 🌿♻️" for Anfouchi beach. After cleaning the beach,



the students discovered the process of transforming plastic waste through 3D printing at the Fab Lab at Alexandria University. This initiative is part of the "Circular Economy: From the Beach to the Lab" project, led by the French Consulate and the French Institute in Alexandria, with financial support from the European Union and in cooperation with the Alexandria Governorate and Alexandria University. The project aims to achieve partnerships for sustainability goals and to engage the local community in these efforts.

<https://www.facebook.com/ifealexandrie/videos/445679398217899>

**Alexandria University is implementing and supervising projects in Alexandria Governorate and the neighboring governorates to conserve water, prevent waste, and promote recycling. Attached is the statement of operations and projects.**

Serial	Name of the organization	Type of operation
1	Northern military area	Preparing designs and supervising the implementation of (13) wells in the center of Wadi Natroun - the governorate of the lake within the scope of the presidential initiative life Karima.
2	General Directorate of horizontal expansion of projects in the West Delta - Damanhour	Permanent supervision of the project of rehabilitation and lining of the branch of the Farhash Tara branch of the General Directorate of irrigation of Nubari - the lake "
3	General Directorate of Irrigation and West Lake	Inspection of Al-Hamrawiya Canal and Al-Rizq Canal - under the jurisdiction of the Irrigation Engineering - Kom Hamada Center.
4	General Directorate of Irrigation and West Lake	It is sponsored by Apia - led by Irrigation Engineering - Kom Hamadeh Center
5	General Directorate of Irrigation and West Lake	His previewing is Fahmy 1, 2-and Nubian 3-property
6	General Directorate of Irrigation and West Lake	Preparing a specialized technical study to study the efficiency of lining work for some conservation care
7	Al-Hamad Company for Contracting	A study of the cracks in the Tintin sponsored by the Al-Mashalah - General Administration of Irrigation and West East
8	Eng. / Morsi El-Morsi El-Zeftawi - Contractor	Prepare a report for its inspection and lining up sponsored by the Avendi
9	Al-Hamad Company for Contracting	Preparation of a study on the cracks occurring in the lining of the canal (Manzil Maimoun and Awlad Mousa).
10	The dream contracting company	Project for rehabilitating and lining the Khalij Barmbal Canal from Km 3.470 to the end - West Irrigation Road, Kafr El-Sheikh.
11	Cooperative Society for the Production of Architecture - Lake	Project for rehabilitating and lining the Eastern Dahiri Canal over a distance from the mouth to the end, with a length of 9.060 km, and the Qamish Canal from the mouth to Km 3.560, with a length of 3.560 km - Al-Buhaira.
12	Helwan diesel engine company	Rehabilitation project sponsored by the new agents, Amin Sayed Ahmed, the new agent feeder, sponsored by the war feeder.

13	General Manager of horizontal expansion and projects in the west of the Delta	Rehabilitation and lining project sponsored by " Khorshid " of the sand irrigation engineering under the control of the General Directorate of Lake Irrigation
14	Central Administration of Water Resources and Irrigation for Alexandria Governorate	Preparation of designs and subtraction documents for the rehabilitation project number 4 " sponsored by Abdul Qadir, sponsored by Kafr Al-Waq, sponsored by Zawiya Saqr Al-Jadida, sponsored by Zawiya Salem" of the General Administration of Irrigation Nubian - Alexandria
15	General Directorate of Irrigation and West Lake	Preparation of the required study regarding the Fire Line Canal and the Al-Ahkar Canal
16	General Directorate of horizontal expansion of projects in the West Delta - Damanhour	Preparation of the required study regarding the Ansariyah Canal link
17	The Irrigation and West Lake Department of the General Directorate of Water Resources and Irrigation in the Lake	Preparation of the required study for five canals (Garrar Ma'niya Canal, Afandia Link Canal, New Shisht Canal, and Al-Azimah Canal from the mouth to the end.
18	General Directorate of horizontal expansion of projects in the West Delta - Damanhour	Preparation of a study on the causes of bridges sponsored by Shakir under the leadership of the General Directorate of West Lake Irrigation - Shibrakhit Irrigation Engineering
19	General Directorate of horizontal expansion of projects in the West Delta - Damanhour	Preparation of a hydrological study for the rehabilitation and lining of the development of the island of the mosque under the control of the General Directorate of Lake Irrigation
20	The Egyptian Rural Company's wells project – Al-Mughaira region	The contract was signed between Alexandria University - Faculty of Engineering - Engineering Center and the Egyptian Rural Company
21	United Housing and Reconstruction Company	Preparation of an Environmental Impact Assessment study for plot number 31 in the second group of the subdivision, changing from residential to service use, for the benefit of the Ministry of Electricity and Energy
22	Alexandria International container Terminal Company	Preparation of an electrical study for the Alexandria Company for international container terminals located in the ports of Dakhila and Alexandria.
23	Egyptian Electricity Transmission Company	Conducting a study of the impact of the magnetic field of the electric link between the Arab Republic of Egypt and the Kingdom of Saudi Arabia on the oil and gas pipeline.
24	Alexandria Governorate and the sanitation Company	Integrated rainwater Management Strategy Project in Alexandria Governorate
25	Legal Representative of the American Private Word Life International School	Preparation of an Environmental Impact Report for the Word of Life American International Private School, located at Part 5, Housha 4, Lake Mariout Basin No. 8, Abis 10, Downtown District, Alexandria.

26	Legal Representative of the British Private Word Life International School	Preparation of an Environmental Impact Report for the Word of Life British International Private School, located at Part 5, Housha 4, Lake Mariout Basin No. 8, Abis 10, Downtown District, Alexandria.
27	Legal Representative of the Nawa Academy School	Preparation of an Environmental Report for Nawa Academy, located at Part 5, Housh 6, Street No. 8, Abis 10, Downtown District, Alexandria Governorate.
28	Al-Taher Modern Real Estate Investment Company	Preparation of an Environmental Impact Assessment study for the plot of land allocated to the company, located in the Sidi Abdel Rahman area, along the coastal road, with an area of 27,706 m <sup>2</sup> , equivalent to (6.5) feddans.
29	Al-Taher Modern Real Estate Investment Company	Preparation of an Environmental Impact Assessment study for the plot of land allocated to the company, located in the Sidi Abdel Rahman Bahri area, along the coastal road, with an area of 19,083 m <sup>2</sup> , equivalent to (4.5) feddans.
30	Major General / Ayman Abdel Haq El-Semlawi, the legal representative of Najm International School	Preparation of an environmental report for the brilliant Virginia International School.
31	Mr. Hani Mustafa Al-Sayed Al-Arabi Legal Representative of Alfa International School	Preparation of an environmental report for Alpha International School
32	Mr. Mohamed Abdel Fattah Hassan – owner of Al Qabas International School	Preparation of an Environmental Report for Al-Qabas International School, located at plot number 633 from 88 original, extending along Iskout Street with a width of 15 meters and extending along Mo'tamed Street with a width of 10 meters – Al-Manshiya Al-Bahriya – Alexandria.
33	Union of occupants of the Costa del Sol village	Preparation of an Environmental Impact Assessment study for Costa del Sol Village – North Coast, Km 82, Alexandria-Matrouh Road
34	Mr. Nabil Fawzi Hanna Makar - owner of the New Oxford International School	Preparation of an Environmental Report for New Oxford International School, located at plot number 1, 2, Basin 63, Lake Mariout - Downtown District - Alexandria.

**Link for Green Cycle Project:**

<https://fb.watch/mzqhBHazV4/?mibextid=j8LeHn>

**Additional evidence link:**

**Link for Sustainable Development:** <https://alexu.edu.eg/index.php/en/sustainable-development>

<https://alexu.edu.eg/index.php/en/2015-11-24-10-38-07/ranking?id=6011>

<http://sustainability.alexu.edu.eg/>

**Link for Green University:**

[https://alexu.edu.eg/index.php/?option=com\\_content&view=article&id=5932&catid=21&lang=ar-AA](https://alexu.edu.eg/index.php/?option=com_content&view=article&id=5932&catid=21&lang=ar-AA)



## Shanghai Irrist Corp., Ltd.

Address: No. 5859 Nanting Highway, Jinshan District, Shanghai, China. 201500

Tel: +86-21-50187007 Fax: +86-21-50187028

Website: [www.enhuawei.com](http://www.enhuawei.com)

July 10, 2018

The Honorable Dean,  
Faculty of Agriculture,  
Alexandria University, Egypt.

### IOT Pilot Project in Egypt by Shanghai Irrist Corp., Ltd.

Dear Prof. Dr. Abdalla Zein Eldein,

On behalf of Shanghai Irrist Corp., Ltd (subsidiary brand of Shanghai Huawei Water Saving Irrigation Corp., Ltd), the top leading irrigation brand in China, I am writing to express our gratitude for allowing us to proceed on the automatic controlled irrigation systems IOT (Internet of Things) project for modern irrigation technology.

Following your acceptance, Shanghai Irrist company will finance and implement the IOT platform project to irrigate economic crops and to facilitate irrigation systems to overcome the water shortage problems in Egypt.

This is our company's liability to introduce the best technology for Alexandria University Farm (the land you suggested) for agroecological farming located in Egypt and to promote the business relationships between China and Egypt to attract more investors for this development cause.

We look forward to a sustained partnership for enhancing the modern irrigation systems to Egypt's agriculture with your esteemed university.

Thank you in advance for your time and your consideration for our project.

Ps: Names and the passport details of the leaders are attached with the letter who will come to sign this MOU with Alexandria university.

Yours Sincerely,

Mr. DENG Shouchi

邓守赤

Director of International Business Department

Shanghai Irrist Corp., Ltd.

Mobile: +86-17721479036

Email: [trade@enhuawei.com](mailto:trade@enhuawei.com)

Cost less Harvest more

## Alexandria Water Resilience-Center of Excellence AWR -COE



Governance and strategic planning workshop



Training for civil and environmental engineering students at the Eastern Wastewater Treatment Plant in Alexandria.

### **Description:**

The Center of Excellence for Water is a USAID- funded program, managed by the American University in Cairo.

Its goal is to catalyze long-term improvement in Egyptian water resources management by improving its innovative applied research and educated enterprise.

Located at Alexandria University, and in cooperation with four Egyptian Universities (Ain Shams University – Aswan University – Beni Suf University – Zagazig University) and four U.S. Universities (University of California, Santa Cruz, Temple University, Utah State University, and Washington State University), The Center of Excellence for Water is designed to be a state-of-the-art center that raises the quality of all aspects of higher education, including curriculum, teaching, and applied research to international standards.



The Center supports the Egyptian government, academia, and industry to address water challenges, and prepare a new generation of graduates and entrepreneurs to be change agents that stimulate economic growth.

Leveraging on the public-private partnerships established, the Center of Excellence for Water will be the hub for research and a vibrant network of Egyptian industries, research centers, and ministries.

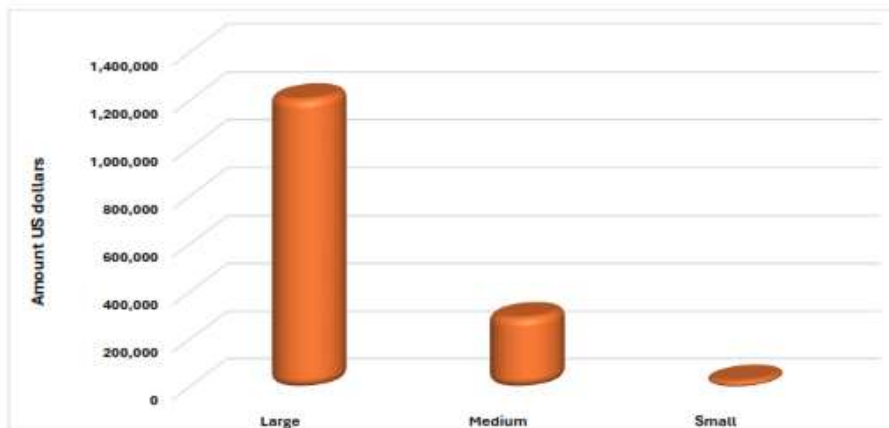
Link: <https://www.coew-grantportal.info/#/landing>

**The following tables illustrate the projects funded through the Water Excellence Center – Alexandria University.**



***First Call Projects***

Type	No.	Amount in US dollars	Amount in Egyptian pound
Large Size Projects	5	1,209,183	37,275,726
Medium Size Projects	6	296,245	9,132,404
Small Size Projects	3	29,500	909,402.4
<b>Total</b>	<b>14</b>	<b>1,534,928</b>	<b>47,317,532</b>





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ALEXANDRIA UNIVERSITY



The American University in Cairo

*Center of Excellence for Water*

No.	Name of Egyptian PI	Name of US PI	Project Title	Budget	Size
<b>Large size projects</b>					
1	(Ain Shams University)	(American University in Cairo)	Sustainable Low-cost Solution for Decentralized Sanitation System in Rural Egypt	215,000	Large
2	(Ain Shams University)	(American University in Cairo)	Using AI Tools to Optimize the Development of Novel Nano-enhanced Membranes for Water Desalination	250,000	Large
3	(Ain Shams University)	(Washington State University)	SMART Irrigation for Maximizing Water Use Efficiency (SIMWUE)	250,000	Large
4	(Beni Suef University)	(American University in Cairo)	Tailored enzymatic and nano-based treatment of wastewater to detoxify heavy metals and degrade antibiotics	250,000	Large
5	(Zagazig University)	(American University in Cairo)	Reducing pollution intensity in Egyptian drains using innovative techniques of electric coagulation using Direct Current by solar cell	244,183	Large
<b>Medium size projects</b>					
6	(Ain Shams University)		Low Cost Technology for Treating Industrial Wastewater for Irrigation Purposes	50,000	Medium
7	(Ain Shams University)		Optimizing Crop-Water Productivity Using Remote Sensing and Multi-Sources Data (WatSens)	46,400	Medium



*Center of Excellence for Water*

8	(Ain Shams University)		Solar Driven, Low Cost, Water Desalination Unit with Minimum Environmental Impact SLoW ME	50,000	Medium
9	(Alexandria University)		Domestic Greywater Treatment and Reuse Prototype	49,845	Medium
10	(Beni Suef University)		Fabrication of hybrid treatment and desalination system for oily wastewater treatment using MOFs composites - Experimental and computational studies	50,000	Medium
11	(Beni Suef University)		For an Integrated Brackish Water Desalination System - The Application of Water Incompatibility in Siwa Oasis as an Innovative strategy for the Production of Low-Cost Irrigation Water using Eco-Friendly Nano-Filtration Self-Cleaning System	50,000	Medium
<b>Small size projects</b>					
12	(Beni Suef University)		Large-scale and sustainable synthesis of commercially feasible TiO <sub>2</sub> /GO nanostructured thin-film composite-based forward osmosis membranes for water desalination (TG-PES-Memb)	9,500	Small
13	(Beni Suef University)		Sensing heavy metals in drinking water using nanophotonic structure	10,000	Small
14	(Beni Suef University)		Salinity sensor for desalination method using photonic crystals	10,000	Small



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UNIVERSITY



**The American**  
University in Cairo

*Center of Excellence for Water*

Alexandria University Project (Accepted but didn't get administration approval)					
1	(Alexandria University)		Continuous Membrane Fabrication Module via Solvent or Emersion Casting technique for Desalination system by the application of Pervaporaton (PV) or Membrane Distillation(MD) techniques. (CMFM)	47,000	Medium
2	(Alexandria University)		Treatment of refinery waste by a novel supported solar photocatalyst system enabling zero liquid discharge	37,100	Medium
3	(Alexandria University)		Design of thermally-localized successive evaporation-condensation desalination unit (TSEC)	10,000	Small

## Alexandria University program to decrease the water consumption in its faculties and buildings:

Campus water use is an important indicator in the sustainability scale. The aim is to urge universities to reduce water use, increase water conservation programs, and protect the environment. Among these criteria:

- The water conservation program,
- The water recycling program
- The use of water-saving equipment
- The treatment of wastewater

1. The University has applied a strategy in the faculties to decrease water consumption through installation of special parts on water taps, showers, toilette and bathroom bide: which can conserve about 50% of water consumption .
2. Water saving devices are used instead of traditional devices. For example, the use of a hand-washing faucet with automatic control via a sensor, and high-efficiency bathroom devices. Supplying water taps with water conservation units.
3. Adopting a mechanism to maintain water pipes to prevent waste resulting from leaks.
4. Adopting plans and mechanisms for maintaining the taps and internal supply networks of the university to prevent water wastage.
5. Air conditioning water collection and reuse unit in Faculty of Engineering.
6. Wastewater treatment unit at the Faculty of Engineering
7. Providing a sewage treatment plant at the university to make it suitable for irrigating green areas and gardens inside the university campus .
8. Innovative Renewable Energy RE-Multi-stage flash system (MSF) with salt precipitator and nanofiltration (NF-MSF) to pre-treat feedwater (RE-NF-MSF) by Faculty of Agriculture, Alexandria University
9. A 100 m<sup>3</sup> desalination unit in Wadi Natroun (Faculty of Agriculture, Alexandria University)
10. The irrigated water supplied to the fish farm at the Agriculture Experimental Research Station of the Faculty of Agriculture is recycled to irrigate the crops, vegetables, and fruits of the land farm. The recycled water is rich with natural fertilizers and enhances the crops production.
11. In addition, the water recycling in Fish Aquaculture of the Faculty of Agriculture, Alexandria University: The water sewage of the Aquaculture of the Faculty of Agriculture, Alexandria University which consist of eight ponds (one acre and quarter/each) in Abis region. Alexandria University used the recycled water for crops culturing in the adjacent agriculture research center in Abis.
12. The use of biochar produced from Agricultural waste and waste Forests in residual removal chlorpyrifos pesticide Imidacloprid is from water agricultural drainage. Cooperation project between the Egyptian Academy of Research Science and Technology and the Czech Academy of Sciences .
13. IOT Pilot Project in Egypt by Shanghai Water Saving Irrigation Corp. Etd performed an automatic controlled irrigation systems IOT project for modern irrigation technology. The company implanted the IOT platform project to irrigate economic crops and facilitate irrigation systems to overcome the water shortage problems in Egypt. This project will be performed in Alexandria University Farm for agroecological farming in Egypt.

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Community Service & Environment Development

14. Raising awareness among university staff and students about water conservation through seminars and workshops organized in collaboration with the Alexandria Drinking Water Company, in order to Strengthen the means of implementation and revitalize the global partnership for sustainable development.
15. The faculty members from the Faculty of Engineering are offering their expertise and advice on the construction of the Mahmoudiyah axis. These engineering consultations may include technical guidance, design recommendations, structural assessments, and other professional input to ensure the project's success, safety, and efficiency throughout the construction process.
16. The Faculty of Pharmacy won the third place in the Alexandria Governorate for the National Initiative for Green Smart Projects in its third edition (2024) with its 'Green Cycle' project, competing in the category of non-profit community initiatives and participations. Notably, this project has now won for the second consecutive year, having previously achieved first place in the Alexandria Governorate last year.
17. Raising awareness among Alexandria University students from various faculties—including Science, Engineering (Civil, Mechanical, and Mechatronics), Commerce, Arts (Surveying, mapping, and GIS), and Fine Arts (Architecture)—about wastewater treatment was achieved through summer training and periodic visits to the laboratories of the Alexandria Sewerage Company. This effort supports the achievement of the Sustainable Development Goals by enhancing partnerships for sustainable development and fostering collaborations that mobilize and share knowledge, expertise, and technology. The training aimed to provide students with essential scientific skills and practical experience to prepare them for the job market (September 2024).
  - Faculty of Science: Theoretical training introduced the role of the Sewerage Company, while practical training involved visits to treatment plants, central laboratories, and lectures on occupational safety and industrial sewage.
  - Faculty of Arts (Surveying, mapping, and GIS): Training included surveying applications, urban planning, and the practical use of leveling instruments, total stations, and GPS devices, concluding with lessons on ArcGIS and sewage system design.
  - Engineering Colleges: Civil Engineering students trained in network renewal and design, while Mechanical and Mechatronics students learned about pump components, welding, and electrical generators, with visits to various workshops.
  - Fine Arts (Architecture): Students received training on project design drawings and estimating costs.
18. The Center of Excellence for Water is organizing a training program for scholarship students. This training is conducted in collaboration between the Water Excellence Center at Alexandria University and EPROM Company to provide a course for a group of students from the Water Excellence Center. This initiative reflects Alexandria University's commitment to equipping its students with practical skills related to water management, ensuring they possess the competencies needed by the business sector while aligning their studies with labor market requirements. The Center of Excellence for Water at Alexandria University has organized a training program for students in the Water Excellence Center Scholarship and the Civil and Environmental Engineering Program. Alexandria University, EPROM Company, and the students are participating in the following two training programs:
  - **Water Treatment for Industrial Applications**
  - **Wastewater Plant Operations and Troubleshooting .**
19. **Green Cycle project in the Faculty of Pharmacy - Alexandria University**  
The project began in October 2022 by organizing a number of events in cooperation between the Community Service and Environmental Development Committee, ASPSA, and the

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Alexandria Rotary Clubs, under the supervision and organization of Faculty of Pharmacy - Alexandria University.

Also, the faculty is seriously seeking to implement a grey water (waste-water) recycling system that depends on reusing wastewater from sewage basins only (without using wastewater from laboratory basins) by re-pumping it into the flushing bins in the toilets after work. Filtration and primary treatment. The grey water recycling initiative has a significant impact on rationalizing water use.

Also, taking advantage of rainwater for use in irrigation and regulatory operations

**Alexandria University** have generalized this initiative in some of the faculties of Alexandria University in gradual stages.

**20. Integrated strategy Project for rainwater management in Alexandria Governorate in cooperation with Alexandria University**

Remote sensing technology was used to know the current values of Rain and assess the current situation with the help of satellites. This is done with the help of the following artificial satellites:

- TRMM and GPM are two of the NASA satellites. (Administration National Aeronautics and Space Administration, United States of America)
- NOAA (National Oceanic, Atmospheric, and Space Administration, United States of America)
- NCEI (National Center for Environmental Information in the United States of America)

**Proposed rain management strategy**

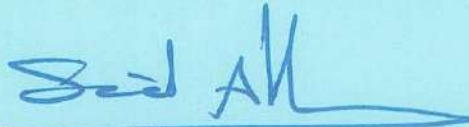
A separate network will be created to drain rainwater for the nearest body of water for areas close to the body of water. The first area is the Corniche, where rainwater is collected and discharging it into marine estuaries. The second area is on both sides of the Mahmoudiyah and Beheira axis near the airport. The rainwater is collected and part of it is drained on the canal and the other part on the airport lake.

In the third stage of the project, the two projects on the airport lake to exploit rainwater will be linked to the New Delta project. The rainwater will be used to irrigate the crops, vegetables, and fruits in the New Delta.

**21. Elements of Green Building Implementation as Reflected in all new construction and renovation policies in the new buildings in Abis campus:**

- The area of the project is 160 acres, a general site for educational buildings, and 120 acres are complementary activities. The percentage of green areas and lake is about 52% in addition to 25% streets and lanes.
- Water-saving plots are used, which will reduce water consumption by about 30%. The sewage water will be treated and reused in the irrigation of green areas in the project.
- Rainwater is collected in the main lake and used for irrigation.
- The use of plants with few water rationed plants to reduce irrigation needs in addition to absorbing quantities of rainwater to reduce the severity of rain spells.

Sincerely,



**Prof. Said Mohamed Allam**

**Vice PRESIDENT**

**Community Service & Environment Development**

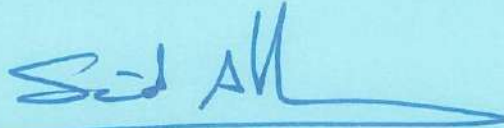
**Alexandria University**

## Alexandria University program to conserve local marine water

Alexandria University are working on studies aimed at protecting and preserving the local marine environment located close to the university's campus.

- 1) An environmental impact assessment was conducted by academic members of the Faculty of Science- Alexandria University to evaluate the rate of shoreline erosion caused by urbanization in Alexandria's North Coast region.
- 2) The chemical and physical evaluation of Doleritic Basalt and Dolomite samples is being conducted to assess their suitability for use in the construction of the western breakwater project, under the authority of the Damietta Port Authority. This evaluation aims to ensure the materials used are appropriate for the breakwater's construction and to prevent coastal pollution. The analysis is carried out by the Faculty of Science (Central Lab).
- 3) The Faculty of Science's Central Lab is performing chemical tests on sea salts that are used in the production of table salt. The purpose of these analyses is to ensure that the sea salts are not contaminated with harmful substances or impurities, guaranteeing their safety and suitability for human consumption.
- 4) The researchers at Alexandria University are conducting studies aimed at preserving and protecting the marine environment near the university campus. Their work likely involves investigating factors that may threaten marine ecosystems, such as pollution or habitat destruction, and developing strategies or solutions to conserve and sustain the health of the local marine environment in the Mediterranean.
- 5) On July 8, 2024, the students from the Faculty of Sport Education, Abu Qir, participate in Initiative to Clean the Eastern Harbour of Alexandria. In line with Alexandria University's commitment to community service and under the auspices of Professor Dr. Abdelaziz Konsowa, President of Alexandria University, and Dr. Yasmine Fouad, Minister of Environment, students from the Faculty of Sport Education in Abu Qir participated in a week-long initiative to clean the eastern harbour of Alexandria. The initiative includes the participation of the El-Raml Rotary Club and the Egyptian Diving and Rescue Federation. The initiative aims to promote sustainable tourism and improve beach enjoyment while supporting local communities in enhancing their waste disposal practices. It also encourages citizens to reduce their use of single-use plastic products and increase recycling efforts. Additionally, the project seeks to educate the public on the importance of maintaining clean and healthy beaches, raising awareness about the threats that plastic and chemical waste pose to marine life, as well as focusing on collecting, classifying, and recycling waste to improve the quality of the coastal environment.
- 6) On June 18, 2024, Students from various schools in Alexandria, along with students from the French Institute in Alexandria, collaborated with Alexandria University to participate in a large-scale cleanup campaign titled "Our Sea is Clean Without Trash 🗑️🌊." for Anfouchi beach. After cleaning the beach, the students discovered the process of transforming plastic waste through 3D printing at the Fab Lab at Alexandria University. This initiative is part of the "Circular Economy: From the Beach to the Lab" project, led by the French Consulate and the French Institute in Alexandria, with financial support from the European Union and in cooperation with the Alexandria Governorate and Alexandria University. The project aims to achieve partnerships for sustainability goals and to engage the local community in these efforts.

Sincerely,



**Prof. Said Mohamed Allam**

**Vice PRESIDENT**

**Community Service & Environment Development**

**Alexandria University**