

IMPACT REPORT 2022

CLEAN WATER AND SANITATION

6 CLEAN WATER
AND SANITATION



PHOTO SOURCE: TASEK VARSITI, UNIVERSITI MALAYA



UNIVERSITI
MALAYA

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PROJECT LEADER AND EDITOR

Rahmat Shah Putra Samsul Rizal

STUDY TEAM

Muhammad Azhar Arif Mohd Azmi

WITH SUPPORT FROM

Tan Siu Ching
Nur Dinah Izzaty
Mohamad Firdaus Ramli
Mohd Fadhli Rahmat
Affan Nasaruddin
Noor Azril Ramli

EDITORIAL & DESIGN

Calven Chow Kai Wen
Rahmat Shah Putra Samsul Rizal

Associate Fellows (Corporate Data Centre)

Dr. Bernardine Renaldo Wong Cheng Kiat
Dr. Tan Hsiao Wei
Huzienetta Hamdan

Subject Matter Experts

Professor Dr. Saiful Anuar Karsani
Dr. Muhammad Azzam Ismail

Administrative Support

Kamisah Samsuddin
Norshila Mat Nor

CONTRIBUTORS

Deputy Vice-Chancellor (Academic & International) Office
Deputy Vice-Chancellor (Research & Innovation) Office
Deputy Vice-Chancellor (Student Affairs) Office
Deputy Vice-Chancellor (Development) Office
Registrar Office
Associate Vice-Chancellor (Corporate Strategy) Office
Associate Vice-Chancellor (Global Engagement) Office
Associate Vice-Chancellor (Infrastructure & Information Services) Office
Department of Development & Estate Maintenance (JPPHB)
Faculty of Built Environment
Faculty of Engineering
Kompleks Pejabat Ladang & Danau Varsiti
Sekretariat Sukarelawan Universiti Malaya (SEKRUM)
Smart Agro-Science Center, Gemas
UM Water Warriors
UM Sustainability & Development Centre (UM SDC)

FOREWORD BY ASSOCIATE VICE-CHANCELLOR (CORPORATE STRATEGY)



The Sustainable Development Goals (SDGs) has transformed the landscape of the higher education sector on a global scale. These 17 goals have become a primary reference framework in many institutions' planning of education & learning, research & innovation, as well as strategic partnerships strategies.

The publication of the 17 Universiti Malaya Impact Reports 2022 is crucial to monitor our efforts towards SDGs as we are advancing our excellence through the implementation of the UM Strategic Plan 2021-2025, UM Transformation Plan 2021-2030, and UM Sustainability Policy 2021-2030.

For many years, UM has integrated the SDGs into our leadership, university policies, curriculum activities, RDCIE initiatives, values, investments, and strategic partnerships with stakeholders to demonstrate that UM also "walks the talk." These efforts involve active engagement from our staff, students, and the broader community of stakeholders and alumni.

Congratulations to the team at the Corporate Data Centre for formulating data-driven comprehensive reports that will serve the University in becoming a Global University Impacting The World.

PREFACE BY DIRECTOR OF THE CORPORATE DATA CENTRE



I am delighted to present all 17 Universiti Malaya Impact Reports for 2022, which review the data related to the Sustainable Development Goals (SDGs) and showcase UM's achievements in 2022. The 17 SDGs serve as a guide for addressing the most pressing issues and critical challenges. Each of the 17 SDGs demands strong collaborative efforts from all levels of society to ensure a more resilient and sustainable future for the next generation.

In the Corporate Data Centre, we apply knowledge and data analytics skills to make informed, evidence-based decisions. This not only helps address current challenges but also ensures preparedness for the future.

These 17 Impact Reports for 2022 are flagship reports designed to assist the University in monitoring and examining our contributions to the country's progress in achieving the 17 SDGs.

I would like to seize this opportunity to express my deep appreciation to my team, who have worked tirelessly to collect and analyse data, enabling us to effectively monitor UM's sustainability efforts. I am also sincerely grateful for the support from UM's top management and the hard work of all colleagues across campus, particularly the Sustainable Development Centre, data managers, and controllers, for their cooperation in providing the SDG data for 2022.

OUR IMPACT IN 2022



24 assistance programs empowered **10694** students in their academic journeys.



12 impactful food assistance programs, including free food, food banks, vouchers, and affordable options, eliminated hunger on UM campus.



Over **20** outreach programs delivered essential health services to local communities in need and refugees.



47 enriching courses featured in the 2022 Short-Term/International Training/Study Tour, part of UM Course Buffet to support lifelong learning.



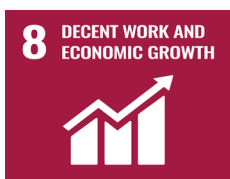
55% Female representation in senior positions



429 participants took on 7 weeks of water conservation challenges during the Kita Jaga Air Challenge 2022.



UM subscribed to the Green Electricity Tariff (GET) program, generating **5.5** million kWh of clean energy



Precision Intervention Program for selected students to produce future-ready graduates enriched with UM DNA.

AIM OF THE GOALS

SDG 1: End poverty in all its forms everywhere

SDG 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture

SDG 3: To ensure healthy lives and promote well-being for all at all ages

SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

SDG 5: Achieve gender equality and empower all women and girl

SDG 6: Ensure availability and sustainable management of water and sanitation for all

SDG 7: Ensure access to affordable, reliable, sustainable and modern energy for al

SDG 8: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

SDG 9: Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation

SDG 10: Reduce inequality within and among countries

SDG 11: Make cities inclusive, safe, resilient and sustainable

SDG 12: Ensure sustainable consumption and production patterns

SDG 13: Take urgent action to combat climate change and its impacts

SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development

SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

SDG 17: Strengthen the means of implementation and revitalize the global partnership for sustainable development

The development of the Industrial Relations Strategic Planning Framework - Industry University Hyper Engagement Collaboration Framework (INSIGHT)

The publication of the First E-Magazine for Persons with Disability by The Secretariat AUN-DPPnet.

The establishment of UM Master Plan document to guide the university towards achieving a Carbon-Neutral Campus by 2050.

9 initiatives conducted by the Zero Waste Campaign to establish an integrated solid waste management system

The establishment of UM Carbon Neutrality Acceleration Living Labs to contribute to the university's carbon-neutral performance.

In 2022, Project Pulih joined forces with RHB ISLAMIC to protect Malaysia marine ecosystems.

Rimba Ilmu, or Forest of Knowledge, covers 40 hectares and contains an estimated living collection of around 1,700 species of plants.

UM as the first university in Malaysia to conduct campus elections fully run by students.

UM as part of 28 Global Network Memberships, has International Partners based in UM, and 96 Academia-Industry Collaborations.





Overall Ranked
in band
101-200 /1591
From band **201-300** in 2022



Ranked
50/876
From **201-300**
in 2022



Ranked in band
101-200/647
From band **201-200**
in 2022



Ranked in band
101-200/1218
From band **201-300**
in 2022



Ranked in band
101-200/1304
From ranked **79**
in 2022



Ranked
3/1081
From ranked **51**
in 2022



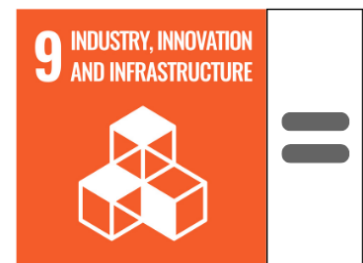
Ranked
60/702
From band **201-300**
in 2022



Ranked
13/812
From **201-300**
in 2022



Ranked in band
401-600/960
From band **401-600**
in 2022



Ranked in band
201-300/873
From band **201-300**
in 2022



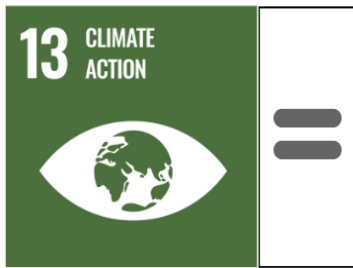
Ranked in band
201-300/901
From band **101-200**
in 2022



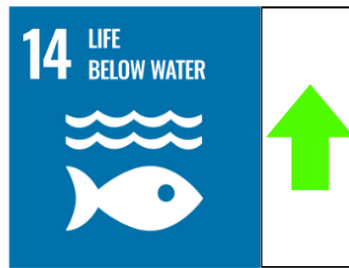
Ranked
72/860
From **101-200**
in 2022



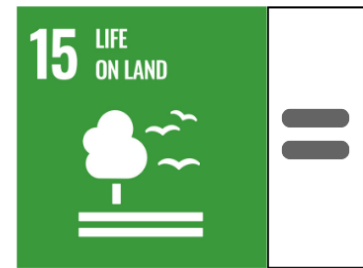
Ranked
73/674
From **201-300**
in 2022



Ranked in band
101-200/735
From band **101-200**
in 2022



Ranked
85/504
From **101-200**
in 2022



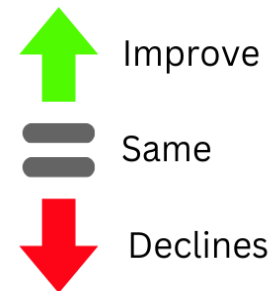
Ranked in band
101-200/586
From band **101-200**
in 2022



Ranked in band
101-200/910
From band **201-300**
in 2022



Ranked
81/1625
From **301-400**
in 2022



UM Water Management

WATER USAGE, REUSE & CONSERVATION

Universiti Malaya's commitment to sustainable practices extends to responsible water management. We emphasise not only efficient water usage but also water reuse and conservation. Through initiatives like rainwater harvesting, efficient irrigation systems, and responsible water consumption in our facilities, we aim to not only reduce our environmental footprint but also set an example for our campus community.

CENTRALISED WASTE WATER TREATMENT

In Malaysia, the responsibility for wastewater treatment and sewerage services is centralised under the Indah Water Konsortium Sdn Bhd (IWK), a government-owned entity overseen by the Ministry of Finance Incorporated. IWK plays a pivotal role in developing and maintaining a modern and efficient sewerage system across Malaysia.

By centralising the management of wastewater treatment, the government aims to ensure the proper disposal of sewage and safeguard the environment and public health.

UM is located in the heart of Klang Valley has opted to out-source its sewerage services to IWK. This partnership ensures the effective treatment of wastewater discharge within the

university's premises, contributing to a healthier and cleaner environment for all.

To maintain high standards of water treatment and safeguard the quality of water bodies, Environmental Quality Act in 1974 was introduced. This legislation encompasses crucial provisions related to effluent and water discharge into various water bodies, reflecting the government's commitment to environmental conservation. Moreover, the act includes detailed guidelines and schedules that further specify the permissible levels of effluent and water discharge. These guidelines serve as a vital initiative to protect public health and safety while promoting clean water and sanitation across the nation.

For more information on Indah Water Konsortium Sdn Bhd,

please visit, <https://www.iwk.com.my/sewage-treatment-plant>

To access the Environmental Quality Act of 1974, including detailed provisions on effluent and water discharge, kindly refer to this [link](#).

PREVENTING POLLUTED WATER ENTERING THE WATER SYSTEM

UM is blessed with multiple water bodies on campus grounds, including natural streams and rivers, as well as a manmade lake at the center of the university. These natural treasures are deserving of protection to ensure their preservation for generations to come. In support of this goal, UM has introduced the UM Eco-Campus Initiative, marked by the launch of the UM Eco-Campus Blueprint.



This blueprint outlines eight core areas, with one of them focusing on Water Management. Within this core area, numerous short and long-term initiatives have been devised to lead the charge in water preservation.

One of these initiatives is UM Water Warriors, an overarching project that encompasses various initiatives, ranging from academic research to community engagement. Under the objective of preserving water bodies and preventing pollution, UM Water Warriors periodically organises cleanup events in the vicinity of the water bodies surrounding UM. These events are essential to prevent external objects from entering the water bodies and, consequently, polluting them. Additionally, ad-hoc events are arranged when deemed necessary, such

as after flash floods, with the assistance of student volunteers from UM.

UM Water Warriors also takes on the responsibility of conducting surface water quality monitoring to assess the level of pollutants in the water bodies around the university campus. These assessments categorise the water bodies into classes based on their water quality, following parameters and classes outlined in accordance with the Environmental Quality Act of 1974.

Furthermore, UM adopts guidelines from the Act for waste management, including scheduled waste and clinical waste, to ensure proper waste management and prevent environmental pollution.

Source:

- 1) [UM Eco-Campus Blueprint](#)
- 2) [UM Eco-Campus Guidelines](#)
- 3) [UM Water Warriors](#)

WASTE AND RIVER VOLUNTEERISM PROGRAM AND RIVER CLEAN-UP INITIATIVES BY WATER WARRIORS

One noteworthy initiative is the volunteerism program by UM Water Warriors, which has become a popular choice among students seeking hands-on experiences, including river clean-up and recycling activities.

On 28 May 2022, a group of UM volunteers participated in a clean-up operation along the rivers within UM's premises in

response to a post-flash flood incident that occurred on April 24. During this event, the volunteers successfully collected 8 kilograms of various types of waste.

Similarly, on 21 May 2022, a team of UM students enrolled in the Volunteerism course lent their support to the Anak Air Batu River Clean-up, along with an effort to clean up the areas within the Faculty of Science UM and the UM Main Library vicinity. Their dedicated efforts resulted in the collection of 7 kilograms of waste materials.

SEKRUM (UM VOLUNTEERISM SECRETARIAT) GO GREEN: 'WALKING THE SUSTAINABILITY TALK WITH ECO-VOLUNTEERISM

This program was hosted by SEKRU- Kluster Alam Sekitar dan Agribio on 2 April 2022, were co-created in partnership with UM Sustainability and Development Centre (UM SDC) & Environmental Sustainability and Health Unit of the Department of Development & Estate Maintenance (JPPHB). A total of 60 student volunteers participated in this program. This

ecovolunteerism program aims to instill the importance of a sustainable lifestyle with hands-on experience to all students.

For more information on these activities, please go to links below.

1) ['Waste & River' Volunteerism Program And Anak Air Batu River Clean-Up Hosted By Water Warriors](#)

2) [Sekrum Go Green: Walking The Sustainability Talk With Ecovolunteerism In Partnership With UM SDC & JPPHB](#)

Sustainability @ UM
NEWS

UNIVERSITI MALAYA



SDG12 RESPONSIBLE CONSUMPTION AND PRODUCTION
12.8 BY 2030, ENSURE THAT PEOPLE EVERYWHERE HAVE THE RELEVANT INFORMATION AND AWARENESS FOR SUSTAINABLE DEVELOPMENT AND LIFESTYLES IN HARMONY WITH NATURE

SEKRUM (UM VOLUNTEERS SECRETARIAT) GO GREEN: 'WALKING THE SUSTAINABILITY TALK WITH ECO-VOLUNTEERISM' IN PARTNERSHIP WITH UM SDC & JPPHB
2 April 2022 (Saturday) 9 am - 12:30 pm @ UM GreenBelt and Campus



SDG6 ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

'WASTE & RIVER' VOLUNTEERISM PROGRAM AND ANAK AIR BATU RIVER CLEAN UP HOSTED BY WATER WARRIORS
21 May (Monday) & 28 May 2022 (Saturday) @ UM Campus



Here is a compilation of pictures taken during the cleaning of the lakes and rivers around the campus.



PROVIDING FREE DRINKING WATER FOR ALL CAMPUS COMMUNITY

UM places a strong emphasis on the well-being of its students, demonstrated by the provision of complimentary water refill facilities conveniently located throughout the campus. These strategically placed facilities can be found in every building, ensuring easy access for both the campus community and visitors. The primary goal of installing these water fountains is to provide UM's community with free access to drinking water. In terms of sustainability, these complimentary drinking water facilities offer an eco-friendly alternative to commercial bottled water, thereby reducing the consumption of plastic water bottles on the campus premises. This commitment underscores UM's dedication to reducing plastic usage on campus, aligning with the broader implementation of UM Eco-Campus initiatives.

WATER-CONSCIOUS BUILDING STANDARD

UM is dedicated to ensuring that all campus buildings adhere to sustainable construction standards. This commitment is exemplified through the introduction of the UM Development Checklist. This document incorporates guidelines related to water-conscious building standards, and it was developed through consultations with various stakeholders, including JPPHB, UMSDC, Faculty of Built Environment, Faculty of Engineering, and PTM, among others. The checklist comprises 10 sections outlining the requirements and standards for constructing and renovating facilities on the UM campus.

Regarding water-conscious building standards, Section 1: Environmental Impact Assessments and Requirements outlines criteria for water management systems, which encompass aspects such as rainwater harvesting, water-saving appliances, the presence of water bodies or water sources, water monitoring systems, and water management technology criteria. Section 6: Green Technologies and Waste Management provides criteria for green technologies and waste management practices integrated into building design. These criteria include considerations for rainwater harvesting and greywater harvesting. The document also outlines criteria for wastewater management and sewerage systems, encompassing wastewater treatment systems, oil and grease traps, and the prohibition of direct discharge into water bodies. These measures collectively aim

to conserve water and prevent water pollution on campus.

The introduction of this document ensures that construction projects undertaken at UM align with the university's established standards. Prior to commencing any project, the project design undergoes evaluation by involved stakeholders, who employ the UM Development Checklist to assess and approve the project for development.

To access UM Development Checklist, please visit this [link](#).

WATER-CONSCIOUS PLANTING

The selection of plants for UM's landscapes and gardens is a meticulous process. These plants are chosen for their safety, ensuring they pose no threat to university property, while also providing a welcoming shade for the campus community. Importantly, they are environmentally friendly and drought-resistant, contributing to water conservation through water-conscious planting techniques.

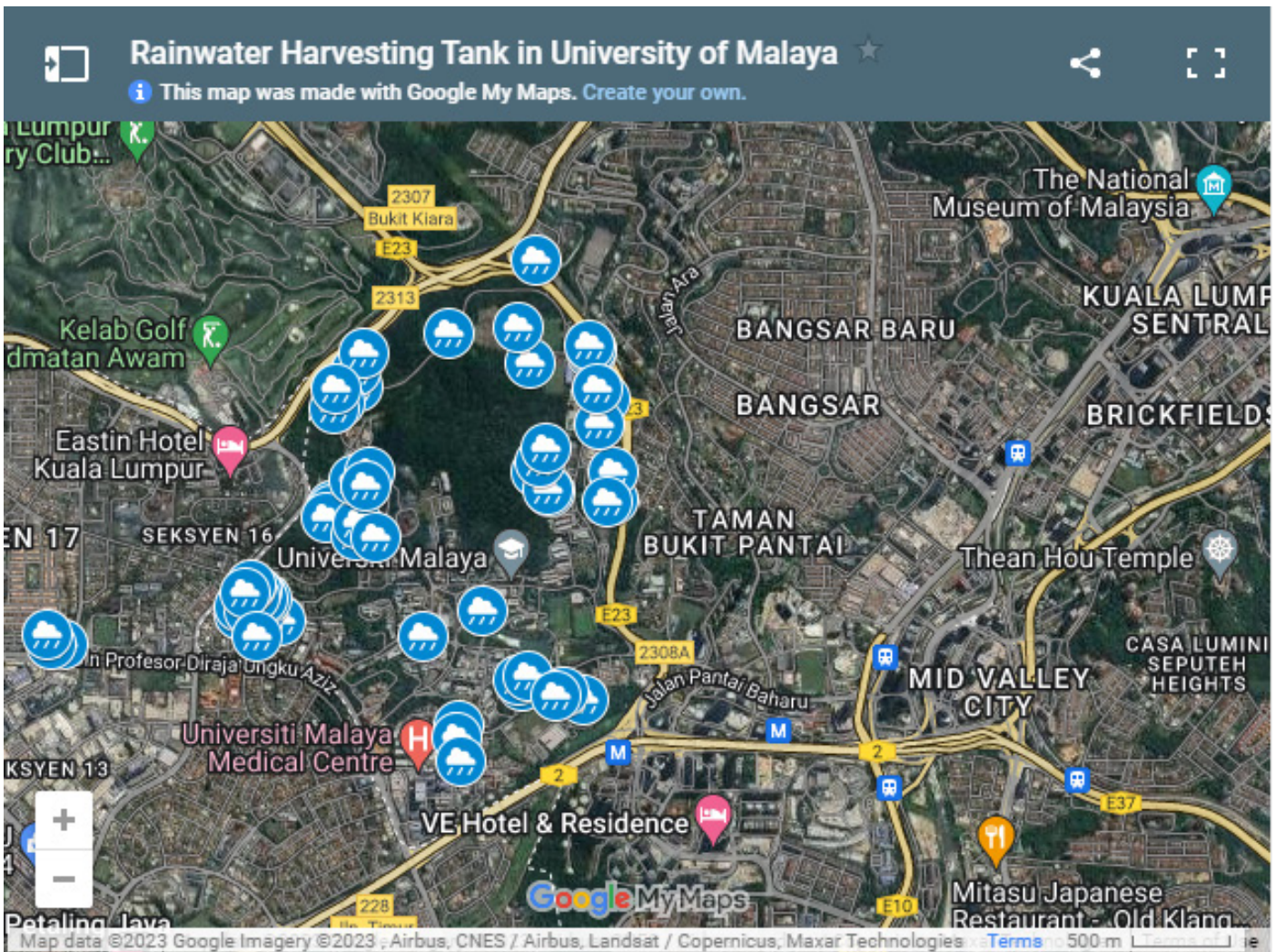
To enhance plant nutrition and fertilisation, the university employs organic methods, primarily mulching. Mulching plays a significant role in the well-being of gardens and landscapes by reducing moisture evaporation and discouraging weed growth, particularly within the botanical gardens.

To oversee and guide these initiatives, UM has introduced the "Guidelines for Landscape Management and Biodiversity Conservation" as part of its UM

Eco-Campus Initiatives. These guidelines provide detailed descriptions of the Centers of Responsibility involved in the initiative, outline the processes for preserving and conserving biodiversity on campus, and offer insights into estate management for the benefit of all parties involved.

For further information please visit links below:

- 1) [Guidelines for Landscape Management and Biodiversity Conservation](#)
- 2) [The RIMBA Project](#)
- 3) [Sustainable Estates Management](#)



UM WATER REUSE POLICY

Within the framework of the UM Eco-Campus Blueprint and UM Sustainability Policy 2021-2030, rainwater harvesting systems have been developed as part of the broader water management initiative, which constitutes one of the blueprint's eight core areas.

The administration of these rainwater harvesting systems fall under the purview of UM Water Warriors, a dedicated center within the UM Eco-Campus, responsible for facilitating water management initiatives throughout UM campus.

These rainwater harvesting systems are primarily installed at academic faculties and residential colleges. Their intended purposes include vehicle washing, watering plants, and serving as emergency water reserves in case of disruptions to the regular water supply.

This initiative exemplifies UM's commitment to promoting water reuse practices within the campus community. To further support implementation, the inclusion of rainwater harvesting systems in future construction planning is a requisite item in the UM Development Checklist.

More information about these rainwater harvesting system, please visit

- 1) [UM Water Warriors](#)
- 2) [Water Handbook Air Selangor](#)



Empowering Communities

OUTREACH ON WATER MANAGEMENT

At UM, we recognise the significance of water management, responsible usage, and conservation in the face of global water challenges. Through our educational outreach programs, we aim to empower communities with the knowledge and skills needed to understand and address these issues. These initiatives extend far beyond our campus, reaching out to local communities.

WATER MANAGEMENT EDUCATIONAL OPPORTUNITIES

UM has taken a step towards realising the mission mentioned above by providing educational opportunities on water management. To raise awareness of water management issues, UM Water Warriors, as the Center of Responsibility dedicated to managing water management-related initiatives at UM, organised various opportunities on-campus and off-campus for students and public communities in 2022.

These activities include opportunities for talks and workshops, where individuals or groups can invite UM Water Warriors to deliver presentations on water conservation and conduct mini-workshops on

water quality and biodiversity at requested locations.

The second activity offered is “Water Detective,” a program designed based on the concept of citizen scientists. Participants in this program will receive a monitoring kit and use it to test the quality of water bodies in their surroundings.

Additionally, UM Water Warriors offers the “Creepy Crawlers” educational event, which entails catching and releasing aquatic insects using nets in streams and learning about why they are important biological indicators for water quality. These are just a few of the programs provided by UM Water Warriors for water management education.

For more information on

educational opportunities from UM Water Warriors, please go to [this site.](#)



Apart from the programs offered by UM Water Warriors, there were also collaborative events between UM Water Warriors and other parties within UM, as well as external organisations. This demonstrates UM Water Warriors' dedication to offering water management educational opportunities, not only for the UM campus community but also for communities beyond the campus.

UM KNOWLEDGE SHARING VISIT TO AIR SELANGOR ON THE MANAGEMENT OF NON-REVENUE WATER (NRW) IN SELANGOR, KL & PUTRAJAYA

On 11 August 2022, a team of 12 individuals from UM, consisting of UMSDC's Water Warriors researchers and engineers and staff from the Department of Development and Estate Maintenance (JPPHB), conducted a sustainability visit to Air Selangor. The purpose of this visit was to conduct a sharing session and to discuss on the management of Non-Revenue Water (NRW) in Selangor, Kuala Lumpur, and Putrajaya. Non-Revenue Water (NRW) refers to clean water that has been produced but is lost somewhere within the water distribution system before reaching the customer, never reaching its intended destination.

SUSTAINABILITY SHARING SESSION: VISIT BY SRI BESTARI PRIVATE SCHOOL TO UM RESEARCH GALLERY 2022

The UM Research Gallery, in partnership with UM SDC, Safe Disposal of Unused Medicines (Safe D.U.M.P), and EcoKnights, hosted a visit from Sri Bestari

Private School in 2022. A group of 65 Grade 3 students, along with their educators, participated in this visit. Mr. Affan Nasaruddin (UM Water Warriors) conducted a sharing session on "Plastic: You & Me."

UM - AIR SELANGOR PARTNERED-UP FOR KITA JAGA AIR CHALLENGE 2022

The "Kita Jaga Air Challenge" was co-organised by UM and Pengurusan Air Selangor Sdn Bhd. The Organisers were solely responsible for executing and managing the Contest. The main objective of this Contest is to motivate users to establish long-term water conservation goals by reducing their daily water consumption and promoting place-based river care. The launch of the Challenge and the Collaborative Agreement exchange ceremony between UM and Air Selangor took place on 30 October 2022, at Rimba Ilmu Botanical Garden. Representing UM was Professor Ir. Dr. Shaliza Ibrahim, UM Deputy Vice-Chancellor (Research and Innovation), while Air Selangor was represented by Mr. Thavendran Loganathan, Head of Risk Management for Air Selangor. This collaboration is a continuation of the Memorandum of Understanding (MoU) and Memorandum of Agreement (MoA) signed in 2021, with a particular focus on the successful development of Air Selangor's Water Handbook - Sustainable Consumption and Conservation for Individuals and Organisations.

SEMINAR ON LAKE & WETLAND ECOHYDROLOGY MANAGEMENT IN PUTRAJAYA

Mr. Affan, representing the UM

to share his knowledge at the Seminar on Lake & Wetland Ecohydrology Management in Putrajaya.

WASTE AND RIVER VOLUNTEERISM PROGRAM

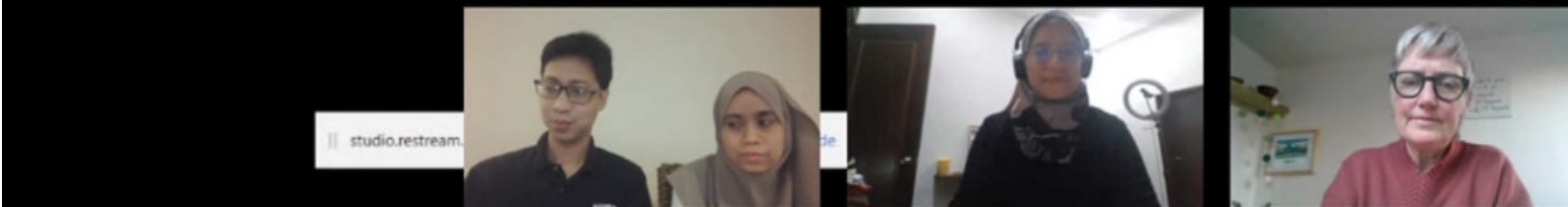
Water Warriors UM is leading a long-term campaign to educate the public, particularly the UM community (staff and students), about the importance of rivers and the reasons for protecting and conserving them. For instance, forming strategic partnerships with various UM entities through academic courses like the volunteerism program has been a practical and highly sought-after option for students to engage in hands-on activities such as river clean-ups and recycling. On 18 May 2022, a group of UM volunteers participated in a post-flash flood clean-up along the rivers in UM following an incident on 24 April 2022 collecting a total of 8 kilograms of various types of waste.

ANAK AIR BATU RIVER CLEAN UP

On 21 May 2022, a team of UM students enrolled in the Volunteerism course supported the Anak Air Batu River Clean-up within the Faculty of Science UM and UM Main Library area, collecting 7 kilograms of waste.

A DAY WITH WATER WARRIORS

7 enthusiastic participants from the Asian Students Environment Platform (ASEP) dedicated their morning to join the Water Warriors in a gotong royong activity to clean the lake area on 22 September 2022.



WATER LEVEL AT UM VARSITY LAKE HAS DROPPED!

JOIN OUR GOTONG-ROYONG ACTIVITY TO DO SOME MAINTENANCE WORK.

What happens when water level drops?

It is likely that the concentration of nutrients and pollutants will increase while dissolved oxygen concentration will decrease, which may exacerbate harmful algal blooms.

**29 JAN 2022
(SATURDAY)
8 AM - 10 AM**

MEET US AT THE STREAM
OPPOSITE UM MAIN LIBRARY

Contact: Affan (012-2072354)
Email: waterwarriors@um.edu.my
Website: www.fb.com/umwaterwarriors

just come at hand :)



PROMOTING CONSCIOUS WATER USAGE ON CAMPUS AND WIDER COMMUNITY

Excessive water consumption is one of the challenges addressed in the UM Eco-Campus Blueprint. This problem pertains to societal behavior and necessitates long-term education and commitment for resolution. As part of the ongoing efforts to cultivate a community committed to responsible water usage, UM, through the UM Eco-Campus Blueprint, has undertaken several initiatives aimed at encouraging conscious water consumption within the campus community.

Institutional efforts encompass the incorporation of water-efficient appliances into campus facilities. These appliances are accompanied by educational posters placed throughout the campus, highlighting the availability of water-efficient appliances for use by the campus community. This initiative is part of UM ongoing, long-term educational awareness campaign aimed at fostering conscious water usage among its community members. Refer to link below for further information on the Conscious Water Usage Campaign around UM campus.

Source:

1) [Compilation of promotional banners around the campus](#)

Other than that, UM Water Warriors, in collaboration with UM Sustainable Development Centre, organised an event in 2022 called the "Kita Jaga Air Challenge". This event, co-hosted with Pengurusan Air Selangor Sdn Bhd, aimed to

encourage participants to establish long-term water conservation objectives by reducing their daily water consumption and fostering a sense of responsibility for local river care. Contestants were required to complete a seven-week water management and conservation challenge while documenting their progress on social media. The organisers will award prizes to those who present the best documentation of their journey. This event is open to everyone, including members of the UM community and the general public. These initiatives are part of UM's commitment to promoting conscious water usage on campus and in the broader community.

More information on the Kita Jaga Air Challenge, please go to <https://www.airselangor.com/kita-jaga-air/>

HAPPY WORLD WATER DAY 2022: GROUNDWATER, MAKING THE INVISIBLE VISIBLE

UM SDC, through UM Water Warriors, promoted the Happy World Water Day 2022 campaign with the theme "Groundwater: Making the Invisible Visible" on 22 March 2022. This campaign was disseminated to the entire campus community through email notifications, banners placed around the campus, and posts on UM's official website.

The purpose of the World Water Day campaign is to celebrate water and raise awareness about the 2.2 billion people who lack access to safe water.

It aims to inspire action to address the global water crisis. In Happy World Water Day 2022, the focus is on groundwater, which is an unseen resource but has a visible impact everywhere. Groundwater refers to water located underground in aquifers, which are geological formations comprising rocks, sands, and gravels that contain significant water reserves. Groundwater sustains springs, rivers, lakes, wetlands, and ultimately flows into oceans. It also plays a vital role in supporting the healthy functioning of ecosystems like wetlands and rivers.

OFF-CAMPUS WATER CONSERVATION SUPPORT

Numerous initiatives undertaken by UM in the field of water management serve as clear evidence of the university's dedication to protecting and preserving the water bodies in its surroundings. This commitment extends beyond the confines of the campus, as UM has actively organised and collaborated with external entities on water conservation efforts.

Sekitar Kita is a university social enterprise, born as a spin-off of UM Water Warriors. The primary objective of this enterprise is to offer innovative ideas and solutions for campus sustainability, with a specific focus on the conservation of water bodies and the reduction of water consumption. Throughout its establishment, Sekitar Kita has collaborated with various public and private entities dedicated to the cause of water conservation.

One ongoing project initiated by Sekitar Kita is a Place-based Citizen Science Program

Happy

WORLD WATER DAY

'GROUNDWATER, MAKING THE INVISIBLE VISIBLE' 2022

CELEBRATED ANNUALLY ON 22.03
since 1993

Did you know?

LIFE WOULD NOT BE POSSIBLE WITHOUT GROUNDWATER. MOST ARID AREAS OF THE WORLD DEPEND ENTIRELY ON GROUNDWATER.

Did you know?

ALMOST ALL OF THE LIQUID FRESHWATER IN THE WORLD IS GROUNDWATER.

Did you know?

ASIA AND THE PACIFIC REGION HAS THE LOWEST PER CAPITA WATER AVAILABILITY IN THE WORLD. WITH GROUNDWATER USE IN THE REGION PREDICTED TO INCREASE 30 PER CENT BY 2050.

Did you know?

GROUNDWATER SUPPLIES A LARGE PROPORTION OF THE WATER WE USE FOR DRINKING, SANITATION, FOOD PRODUCTION AND INDUSTRIAL PROCESSES.

WATER
WARRIORS

WATER
WARRIORS

6 CLEAN WATER AND SANITATION



13 CLIMATE ACTION



Best regards:

UM SUSTAINABILITY AND DEVELOPMENT CENTRE (UM SDC)
PUSAT PEMBANGUNAN KELESTARIAN UNIVERSITI MALAYA
EcoCampus@UM. Rimba Ilmu. Makerspace@UM

  @um.sustainability

 @UniMalayaSDC

 UM Sustainability

 <https://um.edu.my/sustainability-um>



Kita
Jaga Air
Challenge



aimed at promoting water conservation. Within this program, a comprehensive manual for water conservation has been developed and made publicly available for download online. This initiative represents a collaborative partnership involving Universiti Malaya, Cardiff University, Akademi Sains Malaysia, Ungku Omar Newton Fund, UM Water Warriors, and Inspirasi KAWA.

More information of this program, please go to:

<https://sekitar.com.my/projects/place-based-citizen-science-for-water-conservation/>

UM & AIR SELANGOR

UM has also entered into a Memorandum of Understanding (MOU) with Air Selangor to advance their shared agenda for water conservation and preservation. This collaboration aims to benefit the residents of Selangor, the Klang Valley, and Putrajaya. The main objectives of the collaboration are to conduct:

- 1) Joint research activities,
- 2) To co-create and develop a handbook on sustainable water consumption and conservation practices,
- 3) Water conservation and/or river restoration works between Air Selangor and UM's Water Warriors and
- 4) A digital exhibition on water conservation initiatives.

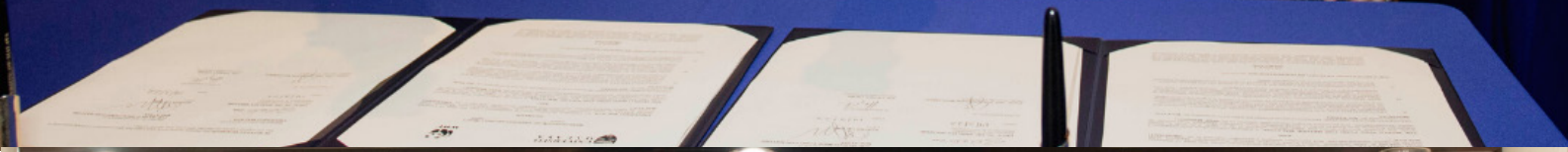
UM & WORLD WILDLIFE FOUNDATION

Another MOU signed by UM

is between the Universiti and the World Wildlife Foundation on 15 March 2022. This MOU establishes a framework for collaboration between UM and WWF-Malaysia, with the shared goal of contributing to the conservation and protection of

biodiversity and ecosystems, as well as promoting sustainable development in Malaysia. Further engagements are expected between the two institutions on the aspect of preservation and conservation of the ecosystem.





Signing the MOU between UM and the World Wildlife Foundation.



Rainwater harvesting practice at Smart Agro-Science Center

SUSTAINABLE WATER EXTRACTION ON UM CAMPUS

UM is blessed with abundant water resources in its campus. In light of this, the university has harnessed water resources from the surrounding areas to support its various operational needs. It is of utmost importance for the university to ensure the proper maintenance of our lake. Since it is a man-made reservoir, it requires a continuous supply of water resources. Groundwater serves as one of the clean water sources for replenishing the lake. The tube well, with a depth of approximately 100 meters, consistently provides a water supply for the lake.

Furthermore, within the Faculty of Science, there exists a groundwater tube well utilised

for the study of groundwater quality and quantity. This tube well functions as an open-air classroom, providing a practical learning environment for students enrolled in the Hydrogeology course.

UM's properties located outside the campus also actively support these initiatives. The Container Office Buildings in the Smart Agro-Science Center of the UM in Gemas, Negeri Sembilan adopted rainwater harvesting practice. This building is equipped with two polyethylene tanks used for collecting rainwater that falls from the roof.

This method serves as a means of conserving water and naturally collecting it. The tanks are positioned on both the left and right sides of the building, and the collected rainwater can be

put to various common uses, such as cleaning the building and more. This approach takes advantage of Malaysia's abundant rainfall by storing rainwater for reuse according to requirements.

Furthermore, for meeting the water requirements of Kompleks Pejabat Ladang Dan Danau Varsiti, which houses approximately 50,000 freshwater fish of three different species, groundwater is currently the water source. Groundwater is extracted through tube wells, with two tube wells in operation, each connected to a submersible pump at a depth of about 50 meters. These pumps have the capacity to extract groundwater at a rate of 18M cube per hour, which is then transferred to polyethylene tanks with a capacity of 1500 gallons.

COOPERATION ON WATER SECURITY

UM AND AIR SELANGOR

UM through UM Water Warriors, has consistently engaged in active collaborations with organisations both within and outside the university, focusing on the critical issue of water security. A notable partnership with Air Selangor resulted in the publication of the Air Selangor Water Handbook, which is made freely accessible to the public. This handbook, dedicated to promoting sustainable consumption and conservation practices for individuals and organizations, is driven by the overarching goal of sustaining, conserving, and rejuvenating water resources. Its introduction aims to educate the public about water resource management with the vision of safeguarding water security for the population.

Air Selangor Water Handbook:

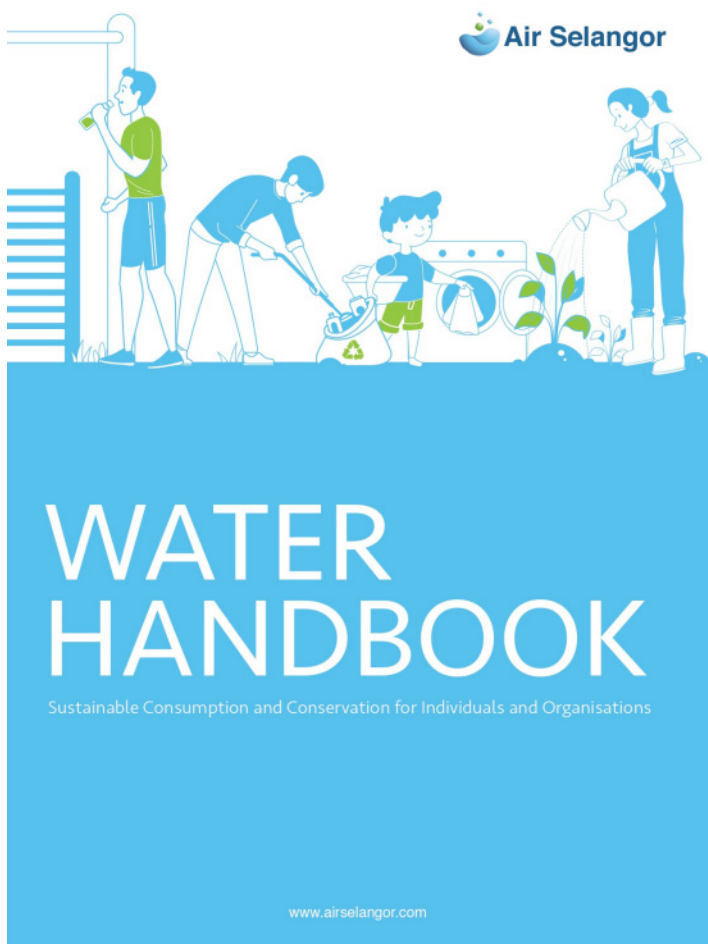
<https://www.airselangor.com/wp-content/uploads/2021/08/Air-Selangor-Water-Handbook-2.pdf>

UM AND WWF

In another collaboration between UM and WWF, a research grant on water quality was awarded by WWF to postgraduate students at UM. This initiative led to a project aimed at investigating microplastic and antibiotic pollution in Sungai Keroh, Segambut. Collaborating with fellow UM researchers and Hara Makers, they analyzed river water samples, engaged in river cleaning activities, and conducted a community awareness program. This comprehensive approach is designed to safeguard water resources, ensuring a continued supply for the community and ultimately enhancing water security for the entire populace.

More information about this collaboration, please visit

<https://www.wwf.org.my/?30525/WWF-Malaysia-Eco-Champions-Created-Pathways-Toward-Net-Zero-Emissions>





6 CLEAN WATER AND SANITATION



CDC welcomes your enquiries and feedback on this report.

Please email: corporate_data@um.edu.my