



UM Sustainability & Living Labs Secretariat (UMSLLS)

UM Campus Sustainability Report 2019/2020





Title:

Universiti Malaya Campus Sustainability Report (UMCSR) 2019/2020

First Edition 2020

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UM Living Lab: Zero Waste Campaign
UM Living Lab: Water Warriors
UM Living Lab: The Rimba Project
UM Living Lab: Imarah Green Project on Eco-Surau APIUM
UM Living Lab: Safe Disposal of Unused Medicines
All respective UM Living Labs Grant Programme 2019/2020

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UNIVERSITI MALAYA AT A GLANCE



Universiti Malaya, or UM, Malaysia's oldest university, is situated on a 922 acre (373.12 hectare) campus in the southwest of Kuala Lumpur, the capital of Malaysia. It was founded on 28 September 1905 in Singapore as the King Edward VII College of Medicine and on 8th October 1949, it became the University of Malaya with the merger of the King Edward VII College of Medicine and Raffles College (founded in 1928). It is a comprehensive university with multidisciplinary learning (from Sciences, Arts and Humanities) that houses more than 24,000 students and 2,200 academic staff (20 over faculties, institutes, academies and research centres).

Based on the UM Strategic Plan of 2016- 2020 forms the last phase of the transformation plan that has a fifteen year horizon (2006-2020), with a guiding objective that is founded on seven Thrusts, that is, to be 'A Globally Influential and Preferred University'. This Plan incorporates specific Goals and leading Strategies and Action Plans, which are aimed at achieving greater collaboration with world-renowned institutions of higher learning, higher impact on research and outputs, and achieving financial sustainability. The Action Plans are driven by our Key Performance Indicators (KPIs).



UM ECO-CAMPUS BLUEPRINT

Parallel to the UM Strategic Plan of 2016-2020, UM Eco-Campus Blueprint (UMECB) is an important component and referral point in coordinating and facilitating all necessary action plan for campus sustainability initiatives. UMECB is the first document produced in University of Malaya 'journey' towards sustainable campus or ecocampus. This journey requires attention, support, cooperation and commitment of all stakeholders and any individual or party willing to ECO-CAMPUS support sustainability initiatives in a holistic and inclusive manner. The campus community should be given opportunity and platform it deserves either at the planning phase, implementation, and continuous development of University of Malaya sustainability initiatives. UMECB consists of eight (8) core areas: Landscape and Biodiversity Management, Waste Management, Water Management, Energy Management, Transportation Management, Green Procurement, Education Management - Environment & Climate Change and, Change Management - Governance, Participation & Communication.

UM CAMPUS SUSTAINABILITY REPORT 2019/2020

This report of UMSLLS Sustainability Report 2019/2020 is part of the varsity deliverables from the ideation of UM Strategic Plan and UM Ecocampus Blueprint (UMECB). Universiti Malaya Sustainability and Living Labs Secretariat (UMSLLS) Sustainability Report summarizes the varsity's progress in sustainable initiatives which aim associated to the UMSLLS Core Area through the year of 2019/2020. This report presents information on sustainable initiatives by the varsity members to comprehensively visualise Universiti Malaya (UM) sustainability endeavours. In times of the COVID-19 pandemic crisis it becomes more important than ever for universities to create value through the sustainability perspectives. We sustain and accelerate our initiatives to acclimatize to these changes. This progress is an opportunity for us to seek thoughtful partners which supportively strategize to learn and cocreate innovative planning to solve for sustainability challenges in the campus, nation, and global scale.







Forewords

Commitment & pledges of Universiti Malaya to strive for a truly sustainable campus in championing SDGs at local and global platform



VICE-CHANCELLOR'S MESSAGE

DATUK IR. (DR.) ABDUL RAHIM HJ. HASHIM VICE-CHANCELLOR, UNIVERSITI MALAYA

The global sustainability target is parallel to our mission, to advance knowledge and learning through quality research and education for the nation and for humanity. Our commitment to conduct teaching and learning, carry out research and provide quality services on a global level, generate and enhance knowledge through continuous improvement efforts for the benefit of all stakeholders as our quality policy also corresponding to global sustainability aims. This aspiration is demonstrable through the concrete initiative of the UMSLLS secretariat commitment to integrate simultaneous economic, environmental, and social impact in eight core areas. Nevertheless, the sustainable development is not a straightforward process of change, we believe that significant progress can be a proving ground, possible to solve issues and unconditionally necessary. The pandemic of Covid-19, it an opportunity for us to indivisibly combine, undertaking this existential crisis with the need to move beyond treating climate change and environmental degradation. Nevertheless, the world's interconnected threats and challenges require all of us to share accountability and contribute to a mutual vision. I am grateful with the progress we have made, although we still have many challenges on the tour to be a sustainable university. Perhaps this initiative will be able to deploy its foundation for a larger consciousness and impact at different scale by taking essential actions in securing our future. I hope not only for this university but for all of us who has the capacity will bequeath an identical legacy when it comes to ascertain the challenges of Sustainable Development Goals (SDGs).





DEPUTY VICE-CHANCELLOR (RESEARCH & INNOVATION)'S MESSAGE

PROFESSOR DR. NORSAADAH ABDUL RAHMAN
DEPUTY VICE-CHANCELLOR (RESEARCH & INNOVATION),
UNIVERSITI MALAYA

Addressing sustainability issues by providing proven research output at a local scale as we implement Living Labs, conducted within the varsity vicinity as a testbed for sustainability intellectual reflection is part of our commitment to contribute in challenges as highlighted in the Sustainable Development Goals (SDGs). Leveraging the campus scape and resources will help to innovate a profound of sustainability knowledge that later be translated and practiced by the society at large. Living Labs, in UM's context, fosters applied research and education by using the campus to test real-time sustainability solutions, offering opportunities to UM stakeholder to translate research into action and enabling the university's fabric to achieve greater engagement through practical, hands-on, and a more well-rounded educational experiences. The Living Lab mode, although relatively new compared to traditional research approach, is quickly gaining attention worldwide where innovative solutions are needed. Thus, we need to seriously pursue not only scientific and technological advancement, but also translational and transformative research to deal with the significant global challenges we face particularly during the sudden pandemic of Covid-19 as well as the new norm that cultured concurrently. It is my genuine hope this sustainability initiative will contribute an insight to solve the sustainability issues as challenged in the SDGs not only in varsity scale, the impact will hopefully ignite for a global solution.

CHAIRPERSON, UM SUSTAINABILITY & LIVING LABS SECRETARIAT (UMSLLS)'S MESSAGE

PROFESSOR DR. SUMIANI YUSOFF
CHAIRPERSON, UNIVERSITI MALAYA SUSTAINABILITY & LIVING
LABS SECRETARIAT (UMSLLS)

The comprehensive 17 Sustainable Development Goals (SDGs) with the empowerment of 169 targets has ignited our initiatives since far the global issues addressed and research created within the campus. The integration we have targeted in our unique eight core areas of UM Eco-Campus Blueprint (UMECB) launched in 2016, i.e. (1) Landscape and Biodiversity Management, (2) Waste Management, (3) Water Management, (4) Energy Management, (5) Transportation System Management, (6) Green Procurement, (7) Education Management -Environment and Climate Change, and (8) Change Management in Governance, Participation, and Communication has been the main agenda to relate and integrate global and local solutions with issues that we are facing. This is how we develop the needs and aspirations of today without compromising the ability of the future to meet their own needs. As in higher education sector, the tradition to ascertain functions of varsity in the nation is concomitantly challenging with the fulfillment of main pillars of Sustainable Development which are the incorporation of the economic development with environmental sustainability and social justice. We are not left behind by reconfiguring the limited resources and balancing each target of the SDGs, we set out impact and endure the sustainability spectrum by innovation to answer the common goals holistically. All action plans are displayed in a short-term and long-term plans to give room of opportunity to campus community to take proactive measures, in-stages, as a show of support towards promoting Universiti Malaya as one of the prominent Eco-Campus model at the local, regional, and international level in tandem with UM status as a premier and world leading university. This report highlights our progress in sustainability initiatives via living labs action research activities for the 2019/2020. Within our capacity, it is in our dream for our beloved varsity to sustain and in track for positively responded to any unprecedented challenges which compromise volatility, uncertainty, complexity, a ambiguity that globally facing and locally undergo. By sharing of experience and output, this report could help to aspire a greener glol mission via not only in our projects but in our own self every action.





EXECUTIVE SUMMARY

Universiti Malaya Campus Sustainability Report 2019/2020 summarizes the varsity's progress in sustainable initiatives which aim associated to the UMSLLS Core Area through the year of 2019/2020. The Report is structured following eight core areas, i.e. (1) Landscape and Biodiversity Management, (2) Waste Management, (3) Water Management, (4) Energy Management, (5) Transportation System Management, (6) Green Procurement, (7) Education Management - Environment and Climate Change, and (8) Change Management in Governance, Participation, and Communication. The main purpose of this agenda is to integrate and relate the global issues and commitment as addressed in the Sustainable Development Goals (SDGs) by outreaching our resources for developing sustainable campus ecosystem. This report presents information on sustainable initiatives by the varsity members to comprehensively visualize Universiti Malaya (UM) sustainability endeavors. A brief summary on UM Ecocampus Blueprint (UMECB) framing our targeted core areas and Living Labs' research output reported in respective sections of this Sustainability Report. In times of the Covid-19 pandemic crisis it becomes more important than ever for universities to create value through the sustainability perspectives. We sustain and accelerate our initiatives to acclimatize to these changes. This progress is an opportunity for us to seek thoughtful partners which supportively strategize to learn and co-create innovative planning to solve for sustainability challenges in the campus, nation, and global scale. To provide feedback on the UM Campus Sustainability Report 2019/2020, please contact us at ecocampus@um.edu.my.

EDITORIAL MEMBER	
INTRODUCTORY & WELCOMING MESSAGES	1
VICE-CHANCELLOR UM	4
DEPUTY VICE-CHANCELLOR (RESEARCH & INNOVATION)	5
CHAIRPERSON, UM SUSTAINABILITY & LIVING LABS SECRETARIAT (UMSLLS)	6
ABOUT THIS REPORT & TABLE OF CONTENT	7
UM SUSTAINABILITY & LIVING LABS SECRETARIAT (UMSLLS)	8
UM CAMPUS SUSTAINABILITY JOURNEY	10
UM SUSTAINABILITY ACHIEVEMENTS	11
UM LIVING LABS GRANT PROGRAMME (UMLLGP)	12
ENVIRONMENTAL PERFORMANCE	24
SOCIAL PERFORMANCE	25
ECONOMIC PERFORMANCE	26
MEDIA APPEARANCES	28
OVERALL CONTRIBUTIONS 2019/2020	30
UM LIVING LABS & SUSTAINABLE DEVELOPMENT GOALS (SDGs)	33
UM SUSTAINABILITY & LIVING LABS SECRETARIAT ACTIVITIES 2020	47

CONTENT



UM Sustainability & Living Labs Secretariat (UMSLLS)

'Be Different, Be the Change'



UM SUSTAINABILITY & LIVING LABS SECRETARIAT (UMSLLS)





Official launch of the **University of Malaya Eco-Campus Blueprint** (UMECB) - 22 April 2016



UMECB: an important referral document in coordinating and facilitating all necessary action plans for campus sustainability initiatives in UM

⊷VISION

To be a leader in campus greening initiatives both at local and international Higher Education Institutional (HEI) platform

■MISSION

To support UM staffs and students to ensure that as a University we work together to build, sustain, and improve our capability in sustainable development agendas

UM Eco-Campus Core Areas:



















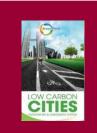
UM Living Labs Grant Programme has been actively participated and assisted in the development and maintenance of several UM's sustainability initiatives



Blueprint



UI GreenMetric World University Rankings (UIGM)



Low Carbon Cities Framework (LCCF)



Times Higher Education **University Impact** Rankings - THE

UM Campus Sustainability Journey







UM APPOINTED AS OFFICIAL TRAINER FOR **KL2017 SEA GAMES & ASEAN PARA GAMES GREEN VOLUNTEERS**

ESTABLISHMENT OF

UM ECO-CAMPUS

SECRETARIAT -

2018 LED BY

PROFESSOR DR.

SUMIANI YUSOFF (Chairperson)

Trained 1000 KL2017 **Green Volunteers** (university and college students) on environmental issues & sustainable waste management practices

Green Metric **RANKED 34TH WORLD'S MOST**

SUSTAINABLE UNIVERSITY IN UI GREENMETRIC WORLD **UNIVERSITY RANKINGS 2019**

RANKED 80TH WORLD'S MOST SUSTAINABLE UNIVERSITY IN TIMES HIGHER EDUCATION IMPACT **RANKINGS (THE IR) 2020**



SUSTAINABLE DEVELOPMENT

ESTABLISHMENT OF UM SUSTAINABLE DEVELOPMENT **SOLUTIONS NETWORK** (UM SDSN) -2014

UM is a member of SDSN Malaysia Chapter since 2014. Currently hosted by Sunway University's Jeffrey Sachs Centre for Sustainable Development. Honorary Professor Dr. Nik Meriam Nik Sulaiman is a

member of SDSN Malaysia

THE GREEN ERA AWARD 2015

UM (UM Zero Waste Campaign)

received The Green Era Award at

OFFICIAL LAUNCH

OF UM ECO-CAMPUS

BLUEPRINT (UMECB)

in Berlin, Germany - 2015

Leadership Council

UM RECEIVED

3 Pioneer UM Living Labs: UM Zero Waste Campaign, Water Warriors UM & The RIMBA Project 1) Initially parked as UMCares Flagship Projects

2) Handed over by UMCares to SuSci RC (2015) 3) Eventually, centralized under the coordination of UM Eco-Campus Secretariat (now: UM Sustainability & Living Labs Secretariat) since 2018 led by Professor Dr. Sumiani Yusoff

3 PIONEER UM LIVING LABS

UM AWARDED WITH 'DIAMOND RATING: BEST

PRACTICE 1' FOR LCCF



Awarded by KeTTHA at IGEM 2017 (13 Oct 2017): aims to support the government policy in reducing 45% of carbon emission per GDP per capita by the year 2030



UM WON TOP PRIZE PLATINUM KL MAYOR'S TOURISM **AWARD 2017** 'EDUCATION TOURISM': CAMPUS SUSTAINABILITY





ESTABLISHMENT OF **UM ECO-CAMPUS COMMITTEE** (JKEKOUM) - 2019 C/O OFFICE OF DVC (R&I)



UM SUSTAINABILITY & LIVING LABS SECRETARIAT (UMSLLS) - 2020

SDG14 CHAMPION & RIVER OF LIFE SPECIAL **AWARDS**

Water Warriors UM won the Petalina Java Sustainable Community Award (SDG14 Life Below Water) by MBPJ (2019)



Water Warriors UM also won the River of Life Public Outreach Program (RoL PoP) Special Award (2019) for their work the betterment of Sungai Klang and its communities



Sustainability Science

SUSTAINABILITY SCIENCE RESEARCH CLUSTER (SUSCI) - 2009



UM ENVIRONMENTAL SECRETARIAT (UMCARES) - 2008

ACKNOWLEDGED AS 1 OF THE 5 **NATIONAL ECO-CAMPUS UNIVERSITIES**

Awarded with Special Award for 'Kelestarian Kampus Hijau': 25 May 2017 by SWCorp

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UM SUSTAINABILITY ACHIEVEMENTS 2019/2020



UM COMMITTED TO:









UM RANKED #34 WORLD'S MOST SUSTAINABLE UNIVERSITY IN UI GREENMETRIC WORLD UNIVERSITY RANKINGS 2019

*out of 780 institutions worldwide

ACHIEVEMENTS:



100% Water Management Initiatives



95.8% Education & Research Initiatives (Sustainability)



83.3% Waste Management Initiotives



81.9% Transportation Monogement Initiatives



73.3% Setting & Infrostructure Initiatives



52.4% Energy & Climate Change Initiatives





Best Education & Research (Sustainability) in Malaysia

Best Waste Management in Malaysia

79% Overall Score increment of 4% compared to 2018

World's Most Sustainable University









MALAYA

University of Malaya









Other notable achievements:

11th World's Best Water Management (Sustainability)

Best Water Management **Initiative in** Malaysia

Best Waste Management **Initiative in** Malaysia

Best Education & Research (Sustainability) in Malaysia

12th World's Best Education & Research

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UM Living Labs Grant Programme (UMLLGP)

Based on 8 Core Areas of UM Eco-Campus Blueprint (UMECB) & Sustainable Development Goals (SDGs)



UM Living Lab Grant Programme

ACTION-ORIENTED & TRANSLATIONAL RESEARCH

to provide sustainable solutions to the campus







Culture Change Students Experience







Optimization of resources and reduces the University's carbon footprint

Provides a real and relevant examples or case studies to enhance learning or teaching

experience

Provides opportunity for students to take part in improving UM's sustainability initiatives

Embeds sustainability into the fabric of the University by allowing new research approach to be tested while improving a crossborder cooperation within and outside UM

Enhance links between research / academics to estate management or Department of **Development &** Estate Maintenance (JPPHB)



UNIVERSITI MALAYA

From laboratory research



To real life solutions







From laboratory research



To real life solutions

8 Core Areas of UM Eco-Campus Blueprint



































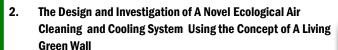




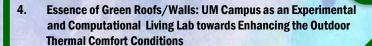


Providing solutions on sustainability issues for biodiversity & landscape management through activities such as Guided Walk, City Nature Challenge and Rimba Ilmu visit













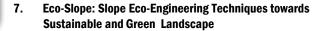
Reducing soil erosion and increasing soil carbon storage and green surface







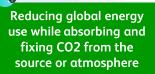






























15 LIFE ON LAND





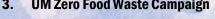
Reduce environmental problem (kitchen waste) while BSF and fly larvae can be commercialized for income generation



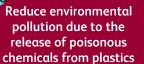
Construction Waste Recycling Center for Sustainable Drainage Construction



Agro-hero: Promoting Green Practices to



Communities for Sustainable Agriculture



02

Waste Management





Reduce environmental problem by disposing medications properly while reducing medicine wastage



Smart Waste Management System using Internet-of-Things (IOT)



Recycled Plastic Aggregate as Replacement for Conventional Aggregates in Concrete



















UM Zero Waste Campaign (UM ZWC)





As an income generation to the university and strategically minimizing harmful environmental impact on campus



PRO Bin



Green Bag Scheme



Biowaste Composting Center



Used Clothes Recycling



Wood Waste Energy Recovery



Cowtec ® Anaerobic Digester



Intelligent Recycle Center



3R on Wheels with Alam Flora ZWC's Guidelines on Food, Green & Wood Waste Separation and Collection



ACHIEVEMENTS OF UM ZWC SINCE INCEPTION (2009 - now)

Environment

Total waste diverted:

> 1,141.19 tonne

Total carbon emission

reduction: >

5,341,576 KG CO₂-

ea

Economy

Total waste disposal cost saved

:>RM390,000

Income generation from training, organic compost & vegetables

sale: >RM100,958

Social

 Total revenue / charity sponsor: >RM38,000

Total visitors: >12,000















Installation of 'Mr. Thimble' and Rainwater Harvesting System at Surau in campus to reduce water consumption



River & Lake Clean-up



Precious Plastic Project



Wetland & Stream Constructions



1. UM Water Warriors

Hands-on training water monitoring

WARRIORS

Reduce water consumption and improve water quality management in campus



Water Management

03

2. Water Monitoring via Internet-of-Things (IOT)

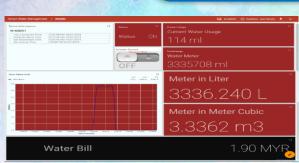


UM Living Lab's new initiative to control water consumption efficiently



















Workshops, brochures, button badges and etc to educate people and increase awareness on energy management & saving





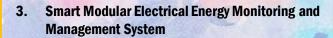
Integration
SWITCH
MODULE
ACCIONAL AND
A CONTROL MODULE
A

UM Living Lab's initiative to control energy consumption from lights and air conditioners as well as to increase its efficiency

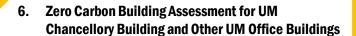


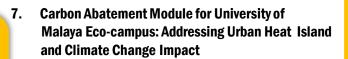


2. Smart Management of Electrical Appliances and Energy Saving using Internet of Things



- 4. Energy Conservation Culture in University of Malaya Campus
- 5. Smart-E (Smart Energy Monitoring & Opitimization for Pre-existing Campus Buildings)







- 8. Development of Renewable Energy Harvesting System from Water Flow in UM
- 9. Study on Electrical Distribution System in UM

























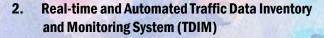
Minimize the motorized vehicle number within campus and reduce transportation carbon footprint.

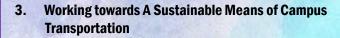
 Sustainable Transport System in University of Malaya Campus: Study on Improve the Feeder Bus Service and Promote Non-motorised Transport Mode in Campus















6. IoT Monitoring and Management System on Campus Sustainable Transportation



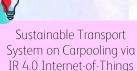












(IoT)





Integrating Green Into The University of Malaya's Procurement Process: A Move **Forward**





Green U Procurement

Embedding Shades of Green in UM's Reporting Pyactices



UM Green Procurement for Food Premises







06



Recycled tires garden

Surau's backyard mini garden

Stepping stone pathways



Seats and benches

Gentle Reminder: Do not step on me!

Surau's backyard view

Providing solutions on sustainability issues for Surau & Muslim Community in UM: Efficient use of Energy and Water, Sustainable Waste Management, Enhance green landscape, education (green usrah)



Children Clothes





Lestari Shop is OPEN!

Men clothes at Lestari Shop



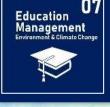




Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project



Decentralization of Laboratory Exercise via Remote Application: A-State-of-the- Art **Approach towards Efficient Educational Facilities Resource and Energy Management in Academic Institutions**





Increase learning efficiency by developing remote experimental facility









17 PARTNERSHIPS FOR THE GOALS 8





An initiative that implemented sustainability in documenting







Providing database system that can store & analyse data collectively







 Enhancing the Visibility of UM Regional Center of Expertise (RCE) Central Semenanjung through Partnership with Bukit Fraser's Community and Authority

University of Malaya Ecological and

Hydrological Data Warehouse Prototype



. The Faculty Sustainability Report Card:
Documenting Faculty Sustainability
Initiatives Towards UM Eco-Campus





Additional Theme: Health and Well-being

- 4. Homes for Active Ageing
- 5. The UM Cancer Farm: A Lifestyle Lab





System







Providing safe & comfortable environment for a good health & well being



UM Living Labs Achievements

Addressing the Three Pillars of Sustainable Development: Environmental Sustainability, Societal Well-being & Economic Performance

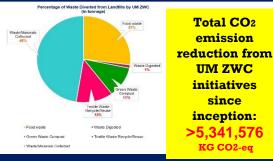




ENVIRONMENTAL PERFORMANCE OF UM LIVING LABS



Total recyclables items collected through UMSLLS initiatives: 238,546.77 kg



UM ZWC initiative has successfully diverted a total of 1,141,190 kg solid waste in UM into useful resources since inception until September 2020



Saved >76, 878 m3 of water from water saving initiatives through installation of Mr. Thimble, Rainwater Harvesting System & IoT Water Monitoring System

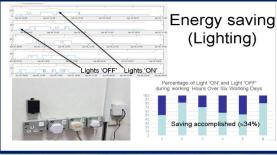
3,193.15 kg of unused medicines returned were reused/ safely disposed



Environmental performance improvement through urban gardening, lake and stream restoration & tree upkeeping



Saved 5,503 kwh through Smart Modular Energy Monitoring System as a pilot study at Faculty of Engineering, UM



SOCIAL PERFORMANCE OF UM LIVING LABS



Community
Composting at
Block P20 Pantai
Dalam,
Bario Sarawak
and Sunway SPK
community
Damansara,
Taman Ser
Sentosa



Imarah
Eco-Surau
Programme
with Residential
Colleges and
outside
stakeholders

(e.g : JAWI, IKIM, JAKIM)



River & Tasik
Varsity
volunteering
clean up
programmes
Fishing
programme



UM Living Labs Site Visits, Demo & Trainings

UM ZWC received >12,000 visitors



RIMBA Ilmu Guided Walks, Trainings and City Nature Challenge





Water saving

initiatives has

bills of

RM123,821.32

while **Faculty of**

Engineering has

saved **RM2,751**

through Smart

Modular Energy

Monitoring system

Centre

APIUM

Lestari Shop

Total green sale:

RM 1,578 items sold

As part of The RIMBA Project

income generation initiative,

this project has collected

RM35,984.76 from guided

walk, crowd funding, book &

merchandise sales

Recyclable Materials: 1,128.17 kg equivalent to RM395.35)



UM ZWC has collected a total of RM100,958 from **UM ZWC Organic** Compost sale & training session

> As part of UM ZWC income generation initiative, this project has earned RM384.50 from the selling of organic vegetables planted at UM ZWC mini garden since early 2020.





UM Water Warriors in collaboration with Faculty of Engineering has collected RM1340 through 'Precious Plastic Project'

UM Water Warriors has collected RM4112.83 through the operation of Air BnB Project since December 2019 and received Superhost Recognition for their outstanding hospitality.



YOU'RE A SUPERHOST!

f y a





UNIVERSITI M A L A Y A





Example of vegetables: chilli, spinach, kale, bitter gourd and pumpkin





















IMPLEMENTING CIRCULAR ECONOMY THROUGH UM ZERO WASTE CAMPAIGN'S FOOD WASTE COMPOSTING & URBAN FARMING PROJECTS







As an income generation to the university and strategically minimizing harmful environmental impact on campus



UM ZWC Composting Site (Takakura Composting)















UM Zero Waste Campaign (UM ZWC) initiative in turning food waste into useful resources (Organic Compost)

Current total sale of Organic Compost, Organic Vegetables & Training Sessions: RM41,000

Other UM ZWC's sustainability initiative is Urban Garden Project. This initiative practiced circular economy by planting fruits (e.g. papaya & pineapple) and vegetables (e.g red chilli, spinach, pumpkin and etc) using UM ZWC organic compost which become part of project's income generation sources. Current total sale of organic fruits & vegetables: RM1,100

UM LIVING LABS MEDIA APPEARANCES



















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Ismail Mokhtar Ketua Pengarah Jabatan Pengurusan Sisa Pepejal Negara Fahmi Fadzil Ahli Parlimen

Sumiani binti Yusoff Dekan Kluster Penyelidikan Sustainability Science, Universiti Malaya

SELAMAT PAGI MALAYSIA

Waste management starts with us

best ways for sustainable environmental preservation through tried models





Thailand





When the tide goes out: Challenges of the water





Universiti Malaya converts decommissioned bus for university students into a room for rental



Activists want stricter zoning laws near water bodies



Sungai Selangor

METRONEWS Monday, 03 Aug 2020 G 🖸 🔞 🙃 👨 00



STRAITSTIMES

The joys and benefits of observing nature

From disused campus bus to cozy lodging

Ramadan: 20,000 tan makanan dibazir

W KUALA LUMPUR 25 APRIL



Greening the campus



UM Living Labs Overall Contributions

Tracking record and its impact on human capital, environmental performance and monetary gains



UM SUSTAINABILITY & LIVING LABS SECRETARIAT (UMSLLS) SUMMARY ACHIEVEMENTS (2015 - present)











Total Direct Income:

RM 86,799





RECOGNITION

Total Indirect saving since: RM 1,035,306

328 **NETWORKING & LINGKAGES**

MEDIA APPEARANCE

Total GHG Emission Reduction: 15,630,000 kg CO₂ -eq

UM LIVING LABS PUBLICATION











GREENHOUSE GASES (GHG) ASSESSMENT

15,630,000

(kg CO₂-eq)

SUCCESSFULLY DIVERTED FROM
UM SUSTAINABILITY & LIVING LABS INITIATIVES
FROM 2015-2019

CARBON SEQUESTERED BY:

258,445

tree seedlings grown for 10 years

Do we have enough land area to plant such a large number of trees?

Will we be able to plant such a large number of trees in our lifetime?

6

UM Living Labs & Sustainable Development Goals (SDGs)

Living up to the aspirations of SDGs by Leaving No One Behind via campus sustainability initiatives and continuous engagements









SDGs & UM Living Labs Contribution (2015 - 2020)

UMLL's contributions in SDGs:

SDG17 - Partnerships for the Goals (19.3%)

SDG11 - Sustainable Cities & Communities (19.3%)

SDG13 - Climate Action (18.7%)

SDG12 - Responsible Consumption & Production (10.5%)

SDG15 - Life on Land (8.8%)

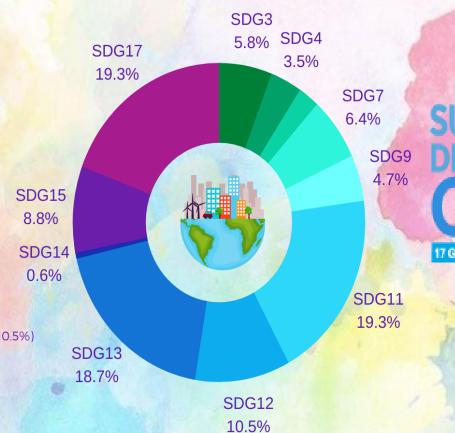
SDG7 - Affordable & Clean Energy (6.4%)

SDG3 - Good Health & Well-Being (5.8%)

SDG9 - Industry, Innovation & Infrastructure (4.7%)

SDG4 - Quality Education (3.4%)

SDG14 - Life Below Water (0.6%)



SUSTAINABLE DEVELOPMENT GALS

17 GOALS TO TRANSFORM OUR WORLD

NOTE: The following SDGs are taken out due to several factors: UMLL Projects are more focus on campus sustainability initiatives (core: environmental component). On that note, other type of research projects and grants in UM would cover these following 'absent' SDGs:

SDG1 - No poverty, SDG2 - Zero Hunger, SDG5 - Gender Equality, SDG8: Decent Work & Economic Growth, SDG10 - Reduced Inequalities, SDG16 - Peace, Justice and Strong Institutions



End poverty in all its forms everywhere





UM Living Labs project that supports SDG1:

• Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project – Eco Free Market at Kerinchi Residence



Capacity Building Programmes



Successful coordination of Eco-Bazar Jariah program:

This program was part of the Back to School Carnival hosted by Masjid al-Khadijiah, Jamek Kampung Pantai Dalam with collaboration of Eco-Free Market (EFM), Yayasan Ikhlas, and GiatMARA. With the theme: 'Rezeki Hari Ini', this program spearheads by Masjid Jamek al-Khadijiah and Yayasan Ikhlas aims to provides a practical platform to identify and assist our community in needs via donation of grocery items, school attires, toys for kids and cash.



Community Involvement





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





UM Living Labs project that supports SDG2:

 UM Zero Waste Campaign: Integrated and Sustainable Management Model Development in University of Malaya Campus







UM Campus Food Bank (Deputy Vice-Chancellor Student Affairs Office)

Implementation of circular economy through UM Zero Waste Campaign's food waste composting & urban farming projects:

UM Zero Waste Campaign (UM ZWC) initiative on circular economy practices through the idea of transforming food waste useful resources by Takakura Composting method. This initiative applies the concept of Waste-to-Wealth as the products (Vegetables and fruits) will be sold to the markets and interested parties. This promotes true circular economy in UM campus as well sustainable agriculture, while strategically minimizing harmful environmental impact in campus.





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







Programmes



List of UM Living Labs projects that support SDG4:

- Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project
- The RIMBA Project: Biodiversity Conservation by reconciling cities and nature
- UM Zero Waste Campaign: Integrated and Sustainable Management Model Development in University of Malaya Campus
- UM Water Warriors



Networking and Linkages with National & International Stakeholders

Imarah Green Project: Surau **APIUM** intends to provide educational programme related to sustainability concerns Islamic perspective and advocate eco-mosque concept at Surau Academy of Islamic Studies, University Malaya (APIUM) by promoting green practices among staff and students. To start the ball rolling, this project has collaborate with significant stakeholders bu integrating proper infrastructures for water conservation, waste management while embedding green biodiversity element around Eco-Surau APIUM. The philosophy of this initiatives were intensified to all Surau of residential colleges in UM and currently working to be expanded beyond the campus wall in collaboration with Jabatan Islam Wilayah Agama Persekutuan (JAWI).





Ensure availability and sustainable management of water and sanitation for all





>1,500 Participation of

volunteers, etc



Capacity Building & **Community Engagement Programmes**

List of UM Living Labs projects that support SDG6:

- UM Water Warriors: Integrated Water Management
- Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project

UM Water Warriors

Water Warriors (WW) is one of the pioneer Living Lab Action Research which **Programmes** focuses specifically for Integrated Water Management at Universiti Malaya "heartwarebu applying thesoftware-hardware" governance approach to deal with water sustainability issues on campus.





Conservation Water **Bodies**

This project works on reviving and conserving water bodies on campus through enhancement of constructed wetland and stream project at Tasek Varsiti, flood mitigation projects, pollution mapping of campus watershed, development of UM Water Educational and Information in conjuction Centre supporting the National Level River of Life (ROL) programme, upcycling of plastic waste from rivers into valuable items and development of interpretive space for UM Green Belt (Tasik *Varsiti and surrounding).*

Conservation Water **Consumption**

Water Warriors also integrating conservation of water bodies by enhancing the adoption of rainwater harvesting system at selected PTis, installation of Cekap Air products in campus and long term water saving strategy (water consumption) through close collaboration with JPPHB, SPAN, etc.





Ensure access to affordable, reliable, sustainable and modern energy for all

7 AFFORDABLE AND CLEAN ENERGY



Clean Biomass: 535kWh (UM Zero Waste Campaign Cowtec Anaerobic Digester Machine) Solar Power: 5,034.74kWh (combination of UMPEDAC Solar Panel, UM Bus Stops, Solar power fountain @RMIC UM)

Wind Power: 4kWh (Ulu Gombak External Studies Centre – Faculty of Science UM, Eco-Greenergy Wind-Solar Outdoor Lighting)

Hydro Power: 5kWh (Ulu Gombak External Studies Centre – Faculty of Science UM)

5,578.74 kWh renewable energy generated and used

List of UM Living Labs projects that support SDG7:

- Robust Smart Modular
 Electrical Energy Monitoring
 and Management System for
 Energy Saving
- Development of Renewable Energy Harvesting System from Water Flow in UM
- Study on Electrical Distribution System in UM



Robust Smart Modular
Electrical Energy
Monitoring and
Management System for
Energy Saving

This project aims to develop a simple, robust and affordable smart adaptive electrical energy management system for energy saving in current and future buildings especially in University of Malaya.









Build resilient infrastructure, through co-location arrangements, promote inclusive and sustainable industrialization and foster innovation





RM 8,633.26

income generated from activities at Rumah No.2 including Air Bnb, Precious Plastic Projects and Environmental Programmes & Workshops

List of UM Living Labs projects that support SDG9:

- Enhancement of Properties of Recycled Plastic Aggregate in Cement-free Geopolymer & Normal Concretes and Application
- UM Water Warriors
- The Rimba Project

Construction of Geopolymer-House from the plastic aggregates

Environmental concerns arising from the over-dredging of sand (fine aggregate) and granite (coarse aggregate) have led to restriction on its extraction across the globe, with direct economic impact on concrete construction. In coherent to that, one of UM Living projects Labs works investigating the replacement percentages of waste plastic to create a whole or partial replacement for fine sand and coarse aggregate (granite) in a novel mix for structural concrete.



Unique Space: UM Bus (Airbnb) at Rumah No.2, Universiti Malaya

AirBnBs at Rumah No.2 as one As part of the long-term income generation strategy, UM Water Warriors ad The Rimba Project have co-jointly transforming an old Universiti Malaya (UM) bus into a chic living space. Located at Rumah No.2, Jalan 16/10B, Seksyen 16, Petaling Jaya, these two of the university's sustainable advocacy group with the support of Department of Development & Estate Maintenance (JPPHB, UM), also renting out one the refurbished room at Rumah No. 2 to accommodate any interested visitors or quests.

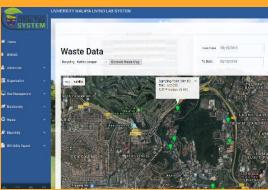






Make cities and human settlements inclusive, safe, resilient and sustainable





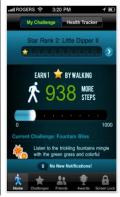
List of UM Living Labs projects that support SDG11:

- Enhancement of Properties of Recycled Plastic Aggregate in Cement-free Geopolymer & Normal Concretes and Application
- UM Zero Waste Campaign: Integrated and Sustainable Management Model Development in University of Malaya Campus
- Safe Disposal of Unused Medications – The Adventure Outward
- UM Water Warriors: Integrated Water Management
- IoT Monitoring and Management System on Campus Sustainable Transportation
- Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project
- A System Approach to Environmental Data Archiving for Sustainability: University of Malaya Living Lab System (Enhancement & Continuation)



UM Living Labs Transportation System

Over these years, continuous *improvement on transportation* system have been made in order ensure that campus community especially students could easily mobilize within UM. Besides. UMbuses. another alternative buses such as RapidKL and MRT buses have also been introduced for of increasing purpose while number of trips minimizing traffic congestion in *UM* by encouraging campus community to use the public transport. In addition to that, UM Living Labs also has initiate a sustainability effort via carpooling system. This pilot study is currently working with the Pusat Teknologi Maklumat UM to holistically covered whole UM Campus community especially for staffs and lecturers.







Ensure sustainable consumption and production patterns

RESPONSIBLE CONSUMPTION AND PRODUCTION



n >

>1000 ton

Total waste diverted

> 4,917,493 KG CO₂-eq

List of UM Living Labs projects that support SDG12:

- UM Zero Waste Campaign (UM ZWC): Integrated and Sustainable Management Model Development in University of Malaya Campus
- UM Green Procurement for Food Premises
- Safe Disposal of Unused Medications – The Adventure Outward
- Enhancement of Properties of Recycled Plastic Aggregate in Cement-free Geopolymer & Normal Concretes and Application
- Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project'

Lestari Shop

As part of the initiative to support the SDG12, Imarah Green Project has initiated Lestari Shop that provides a good-condition of preloved items. These preloved items were donated by UM community which mainly from UM *lecturers* and staffs for the purpose of reselling it in a affordable prices students (especially students). This initiative not only reduce the burden of environment but also demonstrate a sustainable consumption production and patterns.

Safe Disposal of Unused Medication (Safe DUMP)

Safe DUMP project intends to minimizing harmful the environmental impacts medication disposal by collecting unused medication at University of Malaya Medical Centre (UMMC). This project also continuously raising awareness amongst patients at UMMC to practice sustainable consumption by resubmit the unused medication hence it could be used for other purposes. Meanwhile, the expired medication should be dispose properly to protect prolonged effect towards harmful environment.







Take urgent action to combat climate change and its impacts





List of UM Living Labs projects that support SDG13:

- GreenStop: Carbon-balanced Ecosystem in University of Malaya Campus
- The RIMBA Project: Biodiversity Conservation by reconciling cities and nature
- UM Zero Waste Campaign: Integrated and Sustainable Management Model Development in University of Malaya Campus
- UM Water Warriors
- Safe Disposal of Unused Medications – The Adventure Outward
- IoT Monitoring and Management System on Campus Sustainable Transportation
- UM Green Procurement for Food Premises
- Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project

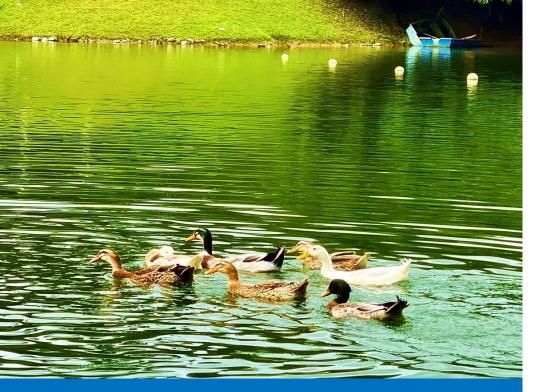


Supporting SDG13 through Implementation of UM Living Labs

The agenda of SDG13: Climate Action was supported integrating sustainable waste management as well as waste separation at source through several UM Living Labs projects. Amonast the initiatives conducted in UM Campus are i) Safe Disposal of Unused Medications (Safe DUMP), ii) Intelligent Recycling Centre, Lestari Shop at Academy of Islamic Studies, Monthly 3R-On-Wheels **Programme** collaboration with Alam Flora Sdn. Bhd, Precious Plastic Projects from Plastic Bottles as well as embedding Green Procurement into UM's Food Procurement.







Conserve and sustainably use the oceans, sea and marine resources for sustainable development





List of UM Living Labs projects that support SDG14:

• UM Water Warriors : Integrated Water Management

UM Wetland & UM Greenbelt Project

One of the pioneer UM Living Lab projects that works on SDG14 is UM Water Warriors. Since 2019, with the aim to rejuvenate the Varsity Lake of UM, UM Water Warriors has introduced several sustainability initiatives namely UM Wetland & UM Greenbelt Projects. UM Wetland focuses on refurbishing the area nearby Varsity Lake in order to initiate a concept of 'wetland' element in UM. Meanwhile, UM Greenbelt covers mainly at Samali Tree and Varsity Lake areas altogether to promote education and awareness amongst UM Community as well as outside citizen to conserve UM's historical nature (Varsity Lake) and resources nearby.



If you pollute water, you pollute life

UM Water Warriors has continuously conducted activities in related to SDG6: Life Below Water through

Lake & river clean ups whereby the amount of trash collected are usually overwhelming even though during the post-Recovery Movement Control Order (RMCO).







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





Participants, stakeholders and volunteers involved

List of UM Living Labs projects that support SDG15:

- The RIMBA Project: Biodiversity Conservation by reconciling cities and nature
- GreenStop: Carbon-balanced Ecosystem in University of Malaya Campus

The Rimba Project

The RIMBA Project continues to champion awareness and appreciation of urban biodiversity, as well as biodiversity conservation and landscape management as part of UM's eco-campus agenda.

Capacity building for citizen science and conservation

The RIMBA Project also works on recruiting, training and deploying volunteers (citizen scientists) in four programme phases: Nature watch Biodiversity survey on Long-tailed Macaque sleeping trees, creative nature education programmes and digital publications.



Urban Garden Instalive by The RIMBA Project during the **Movement Control Order (MCO)**

The emergence of COVID-19 has underscored the fact that when we destroy biodiversity, we destroy the system that supports human life. With regard to nature, COVID-19 pandemic is completely altering human movement and activities, and the world economy, in ways that are likely to have large and unexpected effects on biodiversity conservation. In accordance to that, The RIMBA Project has strategically conducted series of Biodiversity Conservation Sessions via the platform of Instagram Live. This effort intended to encourage worldwide awareness and action for the protection of the environment, specifically for wildlife















Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development





>731



Networking/Linkages/ MoA,MoU,LoA,LoI signing with local and international stakeholders

List of UM Living Labs projects that support SDG17:

- UM Living Lab Administration & UM
- The RIMBA Project: Biodiversity Conservation by reconciling cities and nature
- UM Zero Waste Campaign: Integrated and Sustainable Management Model Development in University of Malaya Campus
- Safe Disposal of Unused Medications
 The Adventure Outward
- Transforming the Role of Surau APIUM for Campus Sustainability Through 'Imarah Green Project'
- UM Water Warriors: Integrated Water Management
- UM Green Procurement for Food Premises
- A System Approach to Environmental Data Archiving for Sustainability: University of Malaya Living Lab System (Enhancement & Continuation)



UM Sustainability & Living Labs Secretariat (UMSLLS):

UM Sustainability & Living Labs Secretariat (UMSLLS) plays a vital role in connecting the dots between Universiti Malaya's sustainability initiatives with not only UM community but also with the outside stakeholders.

Throughout this year, despite of the restriction to conduct any physical activities due to the Movement Control Order (MCO), UMSLLS however seek for another alternative ways to communicate with various stakeholders virtually. This is to highlight that networking should be made especially in the current pandemic era for the benefits of all.





UMSLLS Events 2020

January

Initial Meeting between UM, EPIC and UMCCed 2020 - Open Learning Services

Date: 6 Jan 2020 (Monday)

Time: 10:00 am - 12:00 pm

Venue: Uranus Meeting Room









Biodiversity Forum for Business and Private Sector in Malaysia 2020

Date: 7 Jan 2020 (Tuesday)

Time: 9:00 am – 4:00 pm

Venue: Istana Hotel, Kuala Lumpur





Initial Meeting between UM & Eco-Waste Solutions

Date: 8 Jan 2020 (Wednesday)

Time: 10:00 am - 12:00 pm

Venue : Uranus Meeting Room









UM Sustainability & Living Labs Secretariat Officers attended Administrative Briefing hosted by Deputy Registrar, Office of the DVC (Research & Innovation)

Date: 8 Jan 2020 (Wednesday)

Time: 10:00 am - 12:00 pm

Venue: Meeting Room, Office of the DVC (R&I), Level 8, Chancellery Building



Initial Meeting between UM - DRB HICOM Environmental Services (Alam Flora) & Malakoff

Date: 8 Jan 2020 (Wednesday)

Time: 2:30 pm - 4:00 pm

Venue: Uranus Meeting Room









Final Review of Times Higher Education University Impact Rankings on SDGs (THE UIR on SDGs) hosted by PPSG UM

Date: 9 Jan 2020 (Thursday)

Time: 9:00 am - 11:00 am

Venue: PPSG Level 3, Chancellery UM

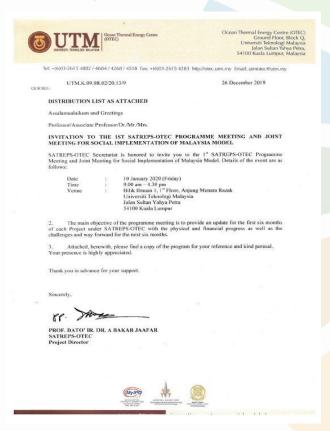


1st SATREPS-OTEC Programme Meeting and Joint Meeting for Social Implementation of Malaysia Model

Date: 10 Jan 2020 (Friday)

Time: 9:00 am - 4:30 pm

Venue: Bilik Ilmuan 1, 1st Floor, Anjung Menara Razak, Universiti Teknologi Malaysia (UTM), Jalan Sultan Yahya Petra, 54100 Kuala Lumpur



1st Monthly Coordination Meeting of UM Sustainability & Living Labs Secretariat 2020

Date: 15 Jan 2020 (Wednesday)

Time: 10:00 am - 12:00 pm

Venue: UM Sustainability & Living Labs Secretariat Office, Level 6, RMIC UM

The meeting agenda is as follows:

- 1. Administrative matter
- 2. Financial matter
- 3. UI GreenMetric & Times Higher Education University Impact Rankings on SDGs (THES)
- 4. Planning of Activities 2020
- 5. Publication 2020
- 6. Quality & Audit Management



UM Living Labs 2019/2020 RAs Monthly Coordination Meeting

Date: 16 Jan 2020 (Thursday)

Time: 10:00 am - 11:30 am

Venue: Video Conference Room, RMIC









Meeting: UM Eco-Campus (Water Warriors & UM ZWC) & WWF-Malaysia WWF-Malaysia

Date: 16 Jan 2020 (Thursday)

Time: 3:30 pm - 5:00 pm

Venue: Uranus Meeting Room, RMIC, UM













'Buluh in the City' by The RIMBA Project & Urban Biodiversity Initiative (UBI)

Date: 18 Jan 2020 (Saturday)

Time: 9:30 am - 1:00 pm

Venue: RIMBA Ilmu



Attach@UM Program 2020 hosted by DVC (Student Affairs)

Date : 20 Jan 2020 (Monday)

Time: 3:30 pm - 4:30 pm

Venue: Dewan Perdana 2, Block D, PerdanaSiswa Complex (KPS) UM



Focus Group Discussion by Universiti Malaysia Terengganu (UMT)

Date: 20 Jan 2020 (Monday)

Time: 3:30 pm - 5:00 pm

Venue : Faculty of Economy & Administration



Academy of Sciences Malaysia (ASM)'s Stakeholders Engagement Workshop on Local and Transboundary Pollution Act 2020

Date: 21 Jan 2020 (Tuesday)

Time: 8.30 am - 1:00 pm

Venue: Function Hall, Academy of Sciences Malaysia, Level 20, West Wing, MATRADE Tower, Kuala Lumpur





Academy of Sciences Malaysia

8 January 2020

Dear YBhg / Datuk / Dato' / Dr/ Prof /Mr /Ms,

Invitation to Local and Transboundary Pollution Act Feasibility Study (LT-PAFS) Stakeholder Engagement Workshop

Greetings from the Academy of Sciences Malaysia.

Transboundary pollution, especially in the form of hate, is no stranger to all Malaysians. In the past decade, remedial actions have been attempted through regional agreements and diplomatic dislogues in ASEAN. With the increasingly heated debate on the involvement of Malaysian companies in the haze episodes, it has come to a time to consider a legal approach to push forward the progress of solving transboundary pollution issues.

As the strategic partner of the Ministry of Energy, Science, Technology, Environment and Climate Change (MESTECC), the Academy of Sciences Malaysia has formed a tack force to evaluate the feasibility of drafting a Local & Transboundary Pollution Act, its implications and implementation directions.

As part of the development of this report, ASM will be organizing a workshop to engage relevant stakeholders from the academia, industry, civil societies and policy makers to validate some of our views and to gather further insights for a comprehensive report. The workshop has been arranged as below:

Date : 21 January 2020

Venue : Function Hall, Academy of Sciences Malaysia, Level 20, West Wing, MATRADE Tower, Kuala Lumpur

On behalf of the taskforce Chairperson, Professor Dato' Ir Dr A. Bakar Jaafar FASc, we would like to invite you or your colleague to participate in our workshop and share your insights on the Local & Transboundary Pollution Act. The outcome of the workshop will be included in the report and serve as reference for MESTEC in formulating the new Act.

Your time and contribution are valuable to us. We appreciate if you could kindly reply us on your availability 14 January 2019 (Tuesday).

enaris MATRADE: opket 20. Sayete Becel lan Bultan Helj Ahmed Sheh Laten Reenku Abdul Heliw

00 6203 0633 T 00 6203 0634 F

www.akadaminaina.gov.my

Should you have any queries about this workshop, you may contact Ms Teng Yu He (teng@akademisains.gov.my) or Ms Sazarul Sabot (saza@akademisains.gov.my) at 03-6203 0633.

Thank you.

Cc. Professor Dato' Ir Dr. A. Bakar Jaafar FASc Chalrperson ASM's Task Force on Local and Transboundary Pollution Act Feasibility Study



Professor Sumiani presenting academia perspective and proposed solution on local and transboundary pollution at the ASM's Stakeholder Engagement Workshop 2020

PPGP's Briefing on Trans-disciplinary Research Grant Scheme (TRGS)& Long-term Research Grant Scheme (LRGS)

Date: 22 Jan 2020 (Wednesday)

Time: 9:00 am - 1:00 pm

Venue: Auditorium, RMIC, UM







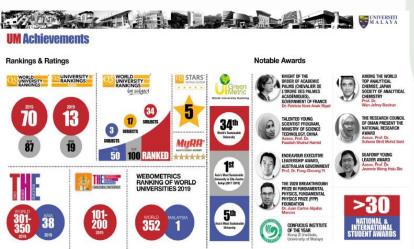
Perutusan Tahun Baru Amanat Naib Canselor 2020

Date: 23 Jan 2020 (Thursday)

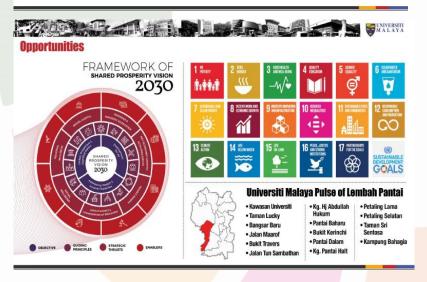
Time: 9:00 am - 12:00 pm

Venue: Dewan Tuanku Canselor (DTC), UM









Brief Discussion on LL037-18SUS Project (Ir. Dr. Khairunnisa Hasikin) on UM GreenStop

Date: 23 Jan 2020 (Thursday)

Time: 12:30 pm - 1:30 pm

Venue: UM Sustainability & Living Labs Secretariat





UM Coordination Meeting on Realizing the Aspiration of '1 Tree,1 UM graduate' program hosted by DVC (Student Affairs)

Date: 28 Jan 2020

Time: 2:30 pm - 4:30 pm

Venue: Rafflesia Meeting Room, Level 1, Information Technology Centre (PTM), UM



 Segala kerjasama dan perhatian daripada YBhg. Tan Sri/ Datuk/ Dato'/ Datin Paduka/ Prof. amatlah dihargai dan didahului dengan ucapan terima kasih.
 Sekian.

"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

(DATO KOF, IR. DR. MOHD SALEH JAAFAR)
Timbalan Ketua Pengarah Pendidikan Tinggi (Akademik dan Pembangunan)
Jabatan Pendidikan Tinggi

s.k.

SUSK YBM KPM

SUS YAB PM Pejabat Perdana Menteri Bangunan Perdana Putra

Pusat Pentadbiran Kerajaan Persekutuan 62502 PUTRAJAYA

[u.p. Puan Nadia Monira Binti Mohamed Taib]

SUSK YBM MESTECC

Pejabat Menteri Blok C5, Aras 7, Kompleks C Pusat Pentadbiran Kerajaan Persekutuan 62662 PUTRAJAYA [u.p.En. Mohd Najeeb Bin Abdullah]

Encik Logesh Kumar Sethuraman Presiden Altruistik Malaysia No. 49, Jalan Saga 26, Taman Saga 68000 Ampang, SELANGOR



Professor Sumiani representing UM
Sustainability & Living Labs Secretariat
with Mr. Hirman Awang
(Senior Assistant Registrar of Student
Affairs Division/HEP) at the Meeting

UMSLLS Events 2020

February

6th 3R On Wheels 2020 Programme

Date: 4 Feb 2020 (Tuesday)

Time: 9:00 am - 2:30 pm

Venue: Kompleks Perdana Siswa (PTM), UM

















UM Living Lab - Water Warriors UM on Water Saving Device Project: Educational Program Training of Trainers (ToT) with Sri KDU (Primary)

Date: 5 Feb 2020 (Wednesday)

Time: 10:00 am - 11:30 am

Venue: Sri KDU Primary School, Kota Damansara









MoA Signing Ceremony between UM & KL Forest Education Group & Chinese New Year Celebration @ Little Urban Forest Preschoolear Open House

Date: 6 Feb 2020 (Thursday)

Time: 10:00 am - 12:30 pm

Venue: Little Urban Forest Preschool, Petaling Jaya, Selangor













UM Research & Innovation Strategic Planning Workshop 2020

Date: 7 - 9 Feb 2020 (Friday - Sunday)

Time: 9:00 am - 10:00 pm

Venue: Concorde Hotel, Shah Alam













RTM Interview & Shooting Session (Notes From Nature) Date: 9 Feb 2020 (Sunday)

Time: 9:30 am - 6:00 pm

Venue: Varsity Lake, Pantai River and Samali Tree UM

















Food Waste Management: Persatuan Peladang Kuala Terengganu Site Visit to UM Zero Waste Campaign (UM ZWC)

Date: 10 Feb 2020 (Monday)

Time: 3:00 pm - 4:30 pm

Venue: Uranus Meeting Room, Level 6, RMIC UM







Dialogue on Open Science

Date: 14 Feb 2020 (Friday)

Time: 10:00 am - 12:30 pm

Venue: RMIC, UM





Sustainable Development Goals (SDGs) Champions 'Baseline Data Formulation & Acquisition Workshop

Date: 15 Feb 2020 (Saturday)

Time: 9:00 am - 4:00 pm

Venue: PJ City Council (MBPJ), Selangor











Introduction Briefing Malaysia Plastic Pact

Date: 18 Feb 2020 (Tuesday)

Time: 9:00 am - 12:45 pm

Venue: SME Corp Malaysia, KL Sentral









Date: 19 Feb 2020 (Wednesday)

Time: 10:00 am - 4:30 pm

LL037-18SUS: GreenStop **PI:** Ir. Dr. Khairunnisa Hasikin

Venue: Bus Stop, 12th Residential College, UM





LL004-15SUS: UM ZWC
PI: Prof. Dr. Sumiani Yusoff
Venue: UM Zero Waste
Campaign Site, Damansara
Gate, UM





Date: 19 Feb 2020 (Wednesday)

Time: 10:00 am - 4:30 pm

LL005-15SUS: The RIMBA

Project

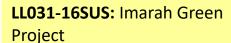
PI: Dr. Sugumaran A/L

Manickam

Venue: Rimba Ilmu, UM







PI: Dr. Asmawati Muhamad Venue: Surau Academy of Islamic Studies (APIUM), UM





Date: 19 Feb 2020 (Wednesday)

Time: 10:00 am - 4:30 pm

LL049-2019: Green

Procurement

PI: Dr. Nor Liyana Shuib

Venue: Seminar Room 3, Block

B, Faculty of Computer Science and Information

Technology, UM

Technology, UM





PI: AP Dr. Rafidah Md. Noor **Venue:** Seminar Room 3, Block B, Faculty of Computer Science and Information





Date: 19 Feb 2020 (Wednesday)

Time: 10:00 am - 4:30 pm

LL023-16SUS: UMLL System

PI: Dr. Sorayya Malek Venue: Uranus Meeting

Room, RMIC, UM





Date: 20 Feb 2020 (Thursday)

Time: 10:00 am - 4:00 pm

LL046-2019: Renewable
Energy Harvesting System
PI: AP Ir. Dr. Hazlee Azil Illias
Venue: High Voltage Research
Group Room, Block Y, Level 1,
Department of Electrical
Engineering, Faculty of
Engineering, UM





LL047-2019 : Electrical Distribution System

PI: Dr. NurulAfiqah Nadzirah **Venue:** UMPES Lab, Block E, Faculty of Engineering, UM





Date: 20 Feb 2020 (Thursday)

Time: 10:00 am - 4:00 pm

LL014-16SUS: Smart Modular **PI:** Dr. Mohd. Yazed Ahmad

Venue: Biosensors &

Embedded System Lab, Block C, Faculty of Engineering, UM





LL045-18SUS: Recyled Plastic

Aggregate

PI: AP Dr. Ubagaram Johnson

Alengaram

Venue: Concrete lab, Block G,

Department of Civil

Engineering, Faculty of

Engineering, UM





Date: 20 Feb 2020 (Thursday)

Time: 10:00 am - 4:00 pm

LL030-16SUS: Safe DUMP **PI:** Dr. Lee Hong Gee **Venue:** Rumah No.2, Jalan 16/10B, Seksyen 16, Petaling Jaya





LL002-15SUS: Water Warriors **PI:** Dr. Nor Aishah Abdullah **Venue:** Rumah No.2, Jalan 16/10B, Seksyen 16, Petaling Jaya





UM Eco-Campus Committee (JKEKOUM) Triannual Meeting 1/2020

Date : 21 Feb 2020 (Friday)

Time: 10:00 am - 12:00 pm

Venue: Jupiter Meeting Room, RMIC, UM













MRUN-UM ZWC Site Visit by UTM Skudai

Date: 26 Feb 2020 (Wednesday)

Time: 10:00 am - 12:00 pm

Venue: UM ZWC Site









FEDTALK 2020 on SDGs by KK5 UM:

Initial Discussion on Strategic Partnership & Green Event Consultation

Date: 26 Feb 2020 (Wednesday)

Time: 2:30 pm - 4:00 pm

Venue : UM Sustainability & Living Labs Secretariat









L'Oréal Malaysia Initial Discussion - Food Waste Management Initiative Collaboration

Date: 27 Feb 2020 (Thursday)

Time: 10:00 am - 12:00 pm

Venue: Uranus Meeting Room









UM Sustainability & Living Labs Secretariat's TV Interview Session with Thai Public Broadcasting Service (Thai PBS)

Date: 28 Feb 2020 (Friday)

Time: 10:00 am - 1:30 pm

Venue: Video Conference Room RMIC UM









UM Sustainability & Living Labs Secretariat's TV Interview Session with Thai Public Broadcasting Service (Thai PBS)

Date : 28 Feb 2020 (Friday)

Time: 10:00 am - 1:30 pm

Venue: UM ZWC Site









UM Sustainability & Living Labs Secretariat's TV Interview Session with Thai Public Broadcasting Service (Thai PBS)

Date : 28 Feb 2020 (Friday)

Time: 10:00 am - 1:30 pm

Venue : Tasek Varsity and Samali Tree











UMSLLS Events 2020

March

FEDTALK: 2050 Global Disaster without SDGs?

Date: 5 March 2020 (Thursday)

Time: 2:00 pm - 6:00 pm

Venue: Dewan Banquet, Rumah Kelab Persatuan Alumni, UM













Farewell to Mrs. Fatehah & Welcome to Mr. Azizi

Date: 6 March 2020 (Friday)

Time: 10:00 am - 12:30 pm

Venue : UM Sustainability & Living Labs Secretariat







UM ZWC & MDHS Initial Discussion on Food Waste Management Project Date: 6 March 2020 (Friday)

Time: 3:00 pm - 5:00 pm

Venue: Uranus Meeting Room, RMIC, UM









PASUM'S Nature Club Visit to UM ZWC

Date: 6 March 2020 (Friday)

Time: 3:00 pm - 5:00 pm

Venue: UM ZWC Site



WW Hands-on Training Water Monitoring for Sg Klang Date: 8 March 2020 (Sunday)

Time: 9:00 am - 12:00 pm

Venue: Rumah No.2, Jalan 16/10B, Seksyen 16, Petaling Jaya

















Discussion with AP Dr Adib on UM Sustainability Conference in October 2020

Date: 10 March 2020 (Tuesday)

Time: 11:00 am - 1:30 pm

Venue : Sanbox Cafe, UM





UMSLLS Special Meeting on Work From Home - COVID-19 Movement Control Order (MCO)

Date: 17 March 2020 (Tuesday)

Time: 10:00 am - 12:30 pm

Venue : UM Sustainability & Living Labs Secretariat





Meet the residents of Rumah No. 2 by The RIMBA Project Date: 16th March to 18th May

Venue: Rumah No. 2, Universiti Malaya



















UMSLLS Events 2020

April

Series of UMSLLS Virtual Meeting

Date: 1 April, 8 April, 15 April, 29 April 2020

Time: 11:00 am- 1:00pm

Platform : Google Meet









World Bee Day (The RIMBA Project)

Date: 20 April 2020 (Monday)









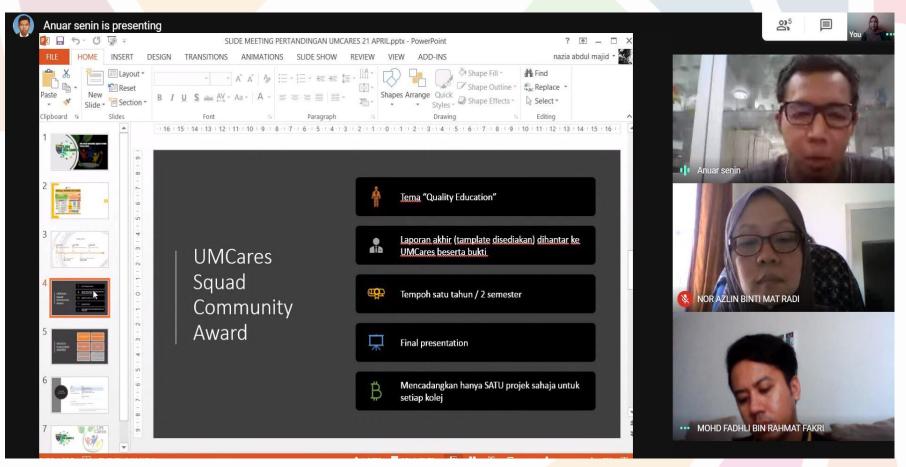


Brief Discussion with UMCares

Date: 21 April 2020 (Tuesday)

Time: 11:00 am - 12:30 pm

Platform : Google Meet

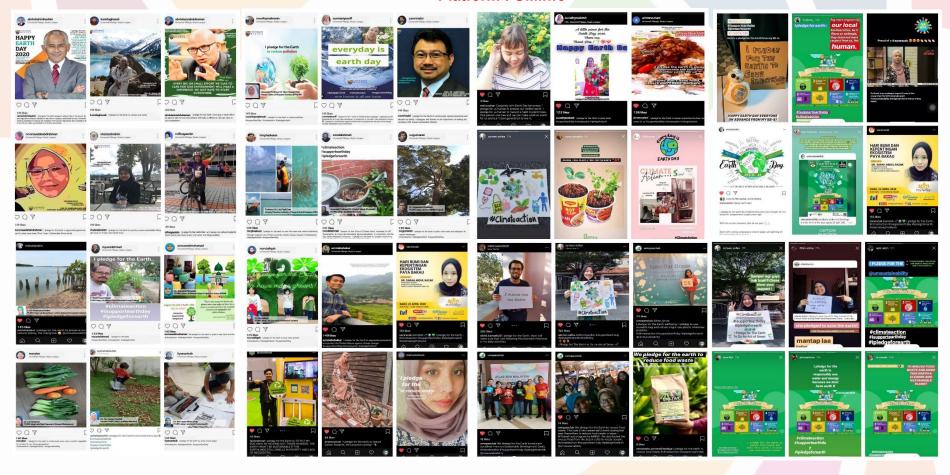


World Earth Day Celebration & Official Launch of UM Living Labs Volume III & IV

Date: 22 April 2020 (Wednesday)

Time: 12:00 pm

Platform: UMinfo

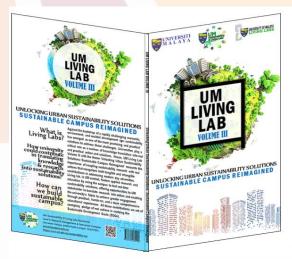


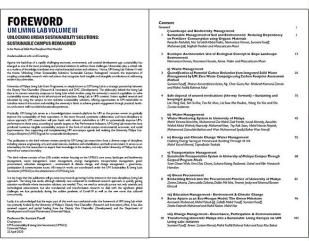
World Earth Day Celebration & Official Launch of UM Living Labs Volume III & IV

Date: 22 April 2020 (Wednesday)

Time: 12:00 pm

Platform: UMinfo







FOREWORD		
	Content	27
UM LIVING LAB VOLUME IV	i) Landscape and Biodiversity Management	
BUILDING RESILIENCE & SUSTAINABILITY LEGACY	Carbon Sequestration Analysis in University of Malaya in	100
	Achieving Carbon-Balanced Ecosystem Khannose Heskin, Nurshofee Hozan Chen, Muhemmed Izet Abu Telib,	
In the Name of Allah Most Beneficent Most Marciful	Nehrizul Adb Kodri, Muhammod Mokhzaini Azizen, Soreh Abdul Razek,	
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on, and a more well-rounded educational experiences.	iii) Transportation Management	37
Fractically, UM Dang Lab serves as a knowledge/action research-platform for UM as the process owner to gradually improve the sostanishing of their operations. In this more forced, systematic collaboration, and trans-sloppleary in mature approach, UM researchers will be hardly with relative stabilishies in UM in systematically reprince UM's performance in these areas, according to specific target on Kipy Performance indicates. UM Using Lab researches have reported in mature trapitols or impacting outputs in the first or option of their distribution consequence according, and social	4 Promoting Campus Walkability as a Sustainable Campus Initiative in a Tropical City Nosin Aghamahammod, Logaraj Ramakreshnan, Chag Saun Fong, Victor Hoe Chee Wai Abdullah and Nik Meriam Nik Sulaiman	37
ingrovements, thus supporting and complementing UM eco-campus agenda and realising the Universiti Malqua Eco- Campus Baspone (UMECB)goals for sustainable development.	5 Walking in University of Malaya Campus! What Matters? Roslewoti Zeinol, Numere Nezmen, Nur Aule Rossi, Yuen Choon Wish, Mas Shehidoyane Makher and Azek Anix Nomen	50
This publication is the fourth volumes written jointly by UM Living Lab researchers from a diverse range of deciplines including science, engineering, arts and social sciences, medicine and rehabilitation, and built environment. It serves as an		
intermediary for the researchers to impart their knowledge to the readers, not only within Universiti Malays, but also	iv) Education Management - Environment & Climate Change	
beyond our campus boundary. The fourth volume consists of new (9) articles written focusing on the UM Eco-Campus Core Area; landscape and backwardy reaggement, water management, order management, transportation management, green procurement,	 Decentralization of Laboratory Exercise via Remote Application Mobil Neshrul Mobil Zuller, Insed Mehrmel, Mobil Horná Abdil Stuker, Miss Labe Met Kiek, Mobil Yarrel Ahmel and Mobil Ride Muhamed 	63
education management - environment & clease change, and change management - governance, participation & communication issues. All research works are coordinated under the LM Sustainables & Living Labs Secretarian		
(UMSLLS) as the administrator of UM Living Lab.	v) Change Management - Governance, Participation & Communication	
It is my hope that this publication will go some way towards genering further interest in the trans-disciplinary Living Lib- appreach. The Living Lib-mode, although relatively new compared to unbiduoud research approach, is qualify gaving asteration workfords where inventive suctions are needed. Thus, we need to anxioty pursue not only viscorific and torkivological advancement, but also translational and transformative research to deal with the supplicant global challenges we for extractable deeper the subdes mandered of Contril 20 and its deep near that obtained	 A System Approach to Environmental Data Archiving for Sustainability: University Malaya Living Lab System Soroyo Molek, Hui Chom and Pozi Milow 	74
concurrently.	8 Sustainability Reporting: The Faculty Sustainability Report Card	86
Lastly, it is acknowledged that the major part of this work was conducted under the formework of IPH Living Lib-inhish was pressally included by the Universite Pallay's Depty Vice Character (Deseases and Invasition) office. It has also received support and partial funding from the Objety Vice Chancellor (Development) and the Objets restricted of Development of Distant Ministrance, Universith Malays.	Norizeh Hissen, Junedoh Sarusi, Siz Zeiduh Zeinudün, Daniel Oxow Ung T'Oxong, Nor Uyana Mohd Shub and Muhamad Fasal Muhamad Noor	

Urban Garden Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

URBAN GARDEN

GUEST: GOH SHANG MING, URBAN BIODIVERSITY INITIATIVE (UBI)
MODERATOR: SYUHADA SAPNO

23 APRIL 2020, 2-3PM

UBI is an independent collective for urban ecology research, conservation and environmental education. In this interview session, we looked into one of the research project UBI is focusing on which is urban gardening. Project manager, Goh Shang Ming shared with us information on what urban gardening is and how to manage urban gardens. Shang Ming also touched on how those living in urban areas with limited space such as in condominiums or apartments could adapt to these restraints to make their own gardens.

A gardener must be well-informed and literate on various perspectives of gardening such as growth duration, potential insects that are attracted to the plants, and type of soil needed.

Shang Ming emphasized that to plant and manage any kind of plants, a gardener must know the type of garden they would like to create - for example ornamental, edible, cultural and so on - and the purpose of creating it. Other topics discussed were garden plants used by orang asli for handicrafts, fertilizers, managing pests, composting, and soil mixture. An interesting aspect highlighted was on looking at plant pests such as caterpillars as a way to increase biodiversity in our very own backyard.

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MODERATED



Date: 23 April 2020 (Thursday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive

Binoculars & GPS – Chasing the Duskies Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

BINOCULARS & GPS -**CHASING THE**

GUEST: JO LEEN YAP, LANGUR PROJECT PENANG (LPP) MODERATOR: SYUHADA SAPNO

24 APRIL 2020, 2-3PM

LPP is a research project that studies the ecology and behaviour of the dusky leaf monkey/dusky langurs (Trachypithecus obscurus) in Penang. In this interview session, Jo Leen shared some insights on her experiences working with this incredible primate and on environmental education. In addressing a question by an audience on how she collaborates with members from different backgrounds, Jo Leen said that we must have an open-mind and an open-heart in accepting what each individual has to offer and only then can everyone's skills be fully utilised for the team's benefit. Jo Leen also shared her inspiring journey on studying dusky langurs and her personal growth.

Curiosity rose in the live chat during the interview session on behaviours and sightings of the langurs and long-tailed macaques

(Macaca fascicularis) in Klang Valley and mainland Penang. Jo Leen mentioned she has received feedbacks from the public on increased sightings of monkeys entering human settlements to search for food since the implementation of Movement Control Order (MCO) due to a decrease in feeding by humans.

It is noted that only a matter of time before the monkeys get accustomed to absence of human-feeding presence and return back to the forest to feed on their natural food. She suggested several ways to mitigate the issue of monkey-feeding. In the midst of it all, Jo Leen shared an amazing video footage of how a dusky langur reacts when it encounters a snake.

The session ended with Jo Leen giving advice to viewers who are keen to start out as environmental educators.





Date: 24 April 2020 (Friday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive

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Fluttering with Lepidopterans Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

FLUTTERING WITH LEPIDOPTERANS

GUEST: SOFWAN BADR, POSTGRADUATE OF IMPERIAL COLLEGE LONDON, UNITED KINGDOM MODERATOR: SYUHADA SAPNO

25 APRIL 2020, 2-3PM

Sofwan is a postgraduate candidate from Imperial College London and a proud alumni of University of Malaya. In this interview session, Sofwan brought us into his world of butterflies and moths. The session began with some clearing of myths regarding the butterfly versus moth distinctions as he talked about the difference in body structures, vibrancy of colours, time of day in which they are active and the resting posture of each respective insect. An interesting fact that was brought up is the incorrect usage of the local malay name between rama-rama and kupu-kupu. The correct terms are rama-rama is meant for moths whereas kupu-kupu for butterflies.

Sofwan showed a Rajah Brooke's birdwing (Trogonopiero brookinno) specimen and introduced it as the national butterfly of Malaysia, which is also the butterfly hologram we can see on Malaysian identity cards. The audience inquired on where this species can be found and how we can attract them to our gardens.

Other points that were addressed are on the pupae stage of their life cycle, species that are endangered in Malaysia, and the effects of climate change towards these insects. Crickets are well-known as a source of protein hence a question rose on the consumption of lepidoptera. Sofwan explained that these lepidopterans are a toxic to be consumed. It may not be fatal but it has an unpleasant taste. That is how some bird species avoid feeding on it.

Date: 25 April 2020 (Saturday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive

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Making Nature's Blueprint Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

MAKING NATURE'S BLUEPRINT

GUEST: BALQIS TAJALLI, DIKAKI SUNPRINT STUDIO MODERATOR: SYUHADA SAPNO

26 APRIL 2020, 2-3PM

Balqis Tajalli is an architecture graduate of Korea National University of Arts and manager of DiKaki Sunprint Studio, an art studio focusing on production of sunprints. Sunprints are photographic prints made with the help of sunlight. The subjects of these prints can range from In this interview session, Balqis started off with sharing how she as an artist is adapting to MCO.

As she gave the audience a demonstration on the sunprinting process, she shared the history of cyanotype and briefly explained the chemicals used. The audience got to know the basics of the process like the solutions and materials used, the ratio of the mixed compounds, and the required duration of sunlight exposure. Balgis noted some tips and findings from her personal experience of doing cyanotype sharing that time and weather affects the richness of blue in the final outcome. Besides that, solutions should be disposed by flushing them down the toilet as to not harm the surrounding environment. Balqis also touched on other light-sensitive dyes as she introduced the audience to anthotype, which is an eco-friendly option compared to cyanotype. However, anthotype does not possess the same archival quality.

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Date: 26 April 2020 (Sunday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive





UMSLLS Events 2020

Monkey Business Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

MONKEY BUSINESS

GUEST: LEE KHAI XIAN, BACHELOR OF SCIENCE (ECOLOGY & BIODIVERSITY)
MODERATOR: SYUHADA SAPNO

8 MAY 2020, 2-3PM

Khai Xian is an ecology and biodiversity undergraduate from University of Malaya who is also an active volunteer for Langur Project Penang (LPP). His final year project is on the activity budget and diet composition of the long-tailed macaques (Macaca fascicularis) in University of Malaya, which he took interest in studying through his volunteering experience with LPP.

From his research, he managed to identify around 5 to 10 species of plants that the macaques feed on, with many more species still in the process of being identified. Some examples of these plants are simpoh air, starfruit, ketapang, jackfruit, sea apple, figs, and some palm trees (e.g.licuala grandis). Interestingly, the part of the plant long-tailed macaques choose to feed on differs from one plant to another as can be seen below:

- · Simpoh air (Dillenia suffruticosa) flower
- . Starfruit (Averrhoo carambola) fruit
- · Sea almond/Ketapang (Terminalia catappa) fruit
- . Sea apple (Syzygium grande) -fruit
- . Figs (Ficus sp.) fruit

Khai Xians fieldwork involves him following the macaque groups movements - wherever they go, Khai Xian will be there to observe. He shared some of the challenges he went through during fieldwork, such as facing difficulty to follow the macaques when they climb high areas like rooftops and his movements being limited due to the buildings surrounding him. In cases like this, he overcomes it by going up the rooftops of other buildings which enables him to observe the macaques from a distance, though in this situation he would face challenges as well as there is limited access to most building rooftops. He mentions that at all times throughout fieldwork, he is aware to keep a safe distance from the macaques as a sign of respect for them and also for his own safety.

Date: 8 May 2020 (Friday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive

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Urban Biodiversity Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

URBAN BIODIVERSITY

GUEST: TAN KAI REN, GREEN G.O., CLUB MED CHERATING MODERATOR: CHUA SU LIN

9 MAY 2020, 2-3PM

Kai Ren is an alumnus from University of Malaya with an incredible amount of experience working in the urban biodiversity field. He is currently the Green G.O. (gentil organisateur) of Club Med Cherating in Pahang. His role as a Green G.O. is to ensure the resort runs sustainably, and he is also helping out with a CSR project on the side. He has seen a wide array of biodiversity on the daily in the forest of Cherating including monitor lizards and monkeys. By the beach, he has seen crabs and sometimes with luck, even turtles.

Moderated by Chua Su Lin, or better known as Judy, the interview kicked off with clarification on whether pests are considered as wildlife. Kai Ren explained that pests are living organisms that bring harmful effects to human-related activity whereas wildlife usually refers to undomesticated animals, which means creatures like cats and dogs are not considered wildlife. With regards to pests being considered as wildlife, Kai Ren states that all pest is wildlife but not all wildlife is pest. He gave the example of how people consider orangutans as pest as they 'steal' fruits but in broader terms, orang utans are wildlife because it is a protected species. It is difficult to concretely define pests and wildlife, though Kai Ren made it clear throughout the whole interview that it ultimately depends on each individuals definition of the words. He also lightly touched on other topics like gardening, farming, weeding, and ways to control invasive species. Answering a viewer's question on his favourite wildlife, he states that it is the dragonfly. Dragonflies are one of the top predators in urban areas and their larvae feed on the larvae of

Date: 9 May 2020 (Saturday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive

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Bila Larut Malam Instalive by The RIMBA Project

[REPORT] INSTALIVE INTERVIEW

BILA LARUT MALAM

BY PRISCILLIA MIARD FROM NIGHT SPOTTING PROJECT (NSP) MODERATED BY SYUHADA SAPNO

10 MAY 2020, 2-3PM

Priscillia Miard is a French scientist who has been carrying out research in Southeast Asia for almost 10 years. Her research project is on small nocturnal mammals in Langkawi Island, looking into various aspects of the animals like their ecology, distribution, and habitat. Her main research focus is on colugos (Goleoptens variegous). Her study site ranges from Penang Island to Langkawi, and even to the mainland where she has been to Merapoh (Pahang), Batu Caves (Selangor) and Ulu Muda (Kedah). Priscillia started a project known as Night Spotting Project (NSP) where she recruits interns and volunteers to help her in her research. 'Bila larut malam' directly translate to 'when it is late a night', depicting her research lifestyle of studying nocturnal mammals.

The session began with Priscillia sharing some backgrounds and facts on colugos. She stated that they are not related to squirrels, and that colugos are close to primates but are not primates themselves. Colugos are an old group of gliding mammals. They represent 1 of the 15 gliding animal species in Malaysia, though more species could exist in total as they are understudied - including colugos. Priscillia mentioned that there is a huge opportunity in the research field regarding behaviours and ecology of nocturnal mammals in Malaysia as not much information can be found on it at the current moment. Addressing a question on predators, Priscillia states that colugos might have less predators on islands as compared to on lands, 80% of colugo diets are comprised of leaves, with the rest being flowers, lichens on trees and soil from old termite nest. They can glide up to a distance of 150m and they are fast creatures. For many years, they were thought to be solitary animals but Priscillia has counted a total of 25 individuals in a stretch of 300m. This finding is considered that they live in a group. It was also recorded that the home range of male colugos overlaps with few females. In terms of interaction with other animals, she previously spotted a colugo and a red giant flying squirrel (Petaurista petaurista) chasing each other on a golf course, though she does not know why they did so.

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Date: 10 May 2020 (Sunday)

Time: 2:00 pm - 3:00 pm

Platform: Instalive

UMSLLS Events 2020

June

UM Eco-Challenge Virtual Assessment

Date: 3rd June 2020 (Wednesday)

Time: 10:00 am - 12:00 pm



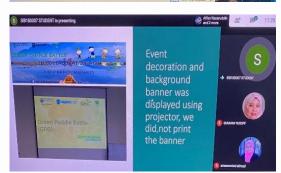
















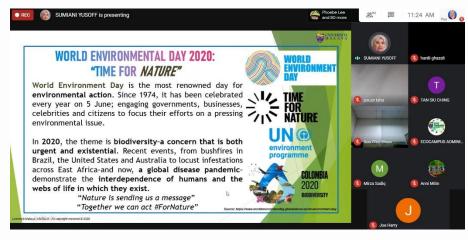
UMSLLS Sustainability Webinar Series 1

Date: 5th June 2020 (Friday)

Time: 10:00 am - 12:00 pm





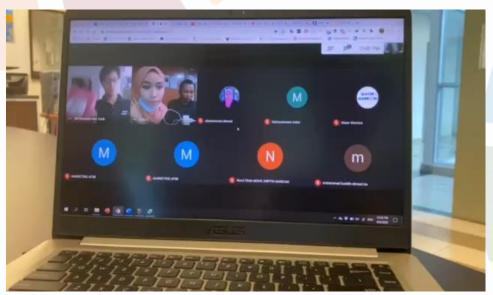




Virtual Visit at Alam Flora's Recycling Innovation Facilities

Date: 9th June 2020 (Tuesday)

Time: 10:00 am - 12:00 pm





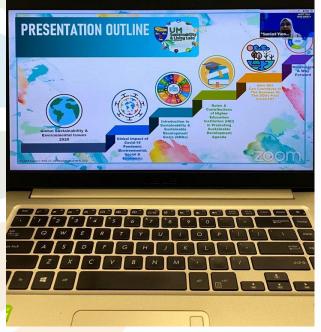
AKEPT- IIUM Dove Webinar Series 3

Date: 22nd June 2020 (Monday)

Time: 9:00 am - 11:00 am







UMCares Competition Award Ceremony

Date: 23rd June 2020 (Tuesday)

Time: 10:00 am - 12:00 pm

Venue : The Cube, RMIC, UM





UMLL 8-Months Virtual Monitoring Workshop – Group A

Date: 29th June 2020 (Monday)

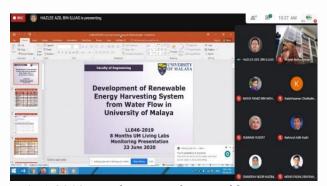
Time: 9:30 am - 1:00 pm

Platform : Google Meet



LL049-2019: UM Green Procurement for Food Premises **Principle Investigator:** Dr. Nor Liyana Shuib

Time: 9:30 am - 10:00 am



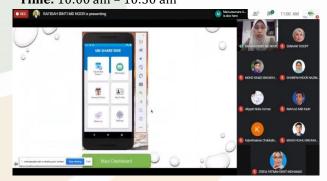
LL046-2019: Development of Renewable Energy Harvesting System from Water Flow in University of Malaya

Principle Investigator: AP Ir. Dr. Hazlee Azil Illias

Time: 10:30 am - 11:00 am



LL005-15SUS: The RIMBA Project: Biodiversity Conservation by Reconciling Cities & Nature (Phase 5) **Principle Investigator:** Dr. Sugumaran A/L Manickam **Time:** 10:00 am – 10:30 am



LL048-2019: IoT Monitoring and Management System on Campus Sustainable Transportation

Principle Investigator: AP Dr. Rafidah Md. Noor

Time: 11:00 am - 11:30 am

UMLL 8-Months Virtual Monitoring Workshop – Group A

Date: 29th June 2020 (Monday)

Time: 9:30 am - 1:00 pm

Platform : Google Meet



LL004-15SUS: UM Zero Waste Campaign: Integrated and Sustainable Management Model Development in University of Malaya Campus (Phase 5)

Principle Investigator: Professor Dr. Sumiani Yusoff

Time: 11:30 am - 12:00 pm



LL014-16SUS: Robust Smart Modular Electrical Energy Monitoring and Management System for Energy Saving (Phase 4)

Principle Investigator: Dr. Mohd Yazed Ahmad

Time: 12:00 pm – 12:30 pm



LL030-16SUS: Safe Disposal of Unused Medications - The

Adventure Outward (Phase 4)

Principle Investigator: Dr. Lee Hong Gee

Time: 12:30 pm – 1:00 pm

UMLL 8-Months Virtual Monitoring Workshop – Group B

Date: 30th June 2020 (Tuesday)

Time: 9:30 am - 12:30 pm

Platform : Google Meet



LL031-16SUS: Transforming the Role of Surau APIUM for Campus Sustainability through Imarah Green Project (Phase 4)

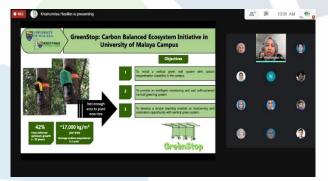
Principle Investigator: Dr. Asmawati Muhamad

Time: 9:30 am - 10:00 am



LL047-2019: Study on Electrical Distribution System in UM for Power Loss Reduction and Potential Cost Savings **Principle Investigator:** Dr. Nurulafiqah Nadzirah Mansor

Time: 10:30 am – 11:00 am



LL037-18SUS: GreenStop: Carbon-Balanced Ecosystem Initiative in University of Malaya campus (Phase 2) **Principle Investigator:** Ir. Dr. Khairunnisa Hasikin

Time: 10:00 am - 10:30 am



LL002-15SUS: UM Water Warriors: Integrated Water

Management (Phase 5)

Principle Investigator: Dr. Nor Aishah Abdullah

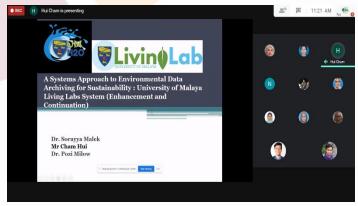
Time: 11:00 am - 11:30 am

UMLL 8-Months Virtual Monitoring Workshop – Group B

Date: 30th June 2020 (Tuesday)

Time: 9:30 am - 12:30 pm

Platform : Google Meet



LL023-16SUS: A System Approach to Environmental Data Achieving for Sustainability: University of Malaya Living Lab System (Enhancement & Continuation) (Phase 4) **Principle Investigator:** Dr. Sorayya Bibi Malek

Time: 11:30 am – 12:00 pm



LL045-18SUS: Enhancement of Properties of Recycled Plastic Aggregate in Cement-Free Geopolymer & Normal Concretes and Application (Phase 2)

Principle Investigator: AP Dr. Ubagaram Johnson

Time: 12:00 pm - 12:30 pm

Invited as a Keynote Speaker at ITERA's International Webinar on Regional and Global Environmental Challenges, and Collaboration for Innovative Solutions Universiti Tun Hussein Onn (UTHM)

Date: 30th June 2020 (Tuesday)

Time: 9:30 am - 12:30 pm

Platform : Google Meet







International Webinar

"Regional and Global Environmental Challenges, and Collaboration for Innovative Solutions"



AP Dr Acep Purqon,

Head, Research center of fiber optics technology and Big Data analysis, and Chief of data science department, ITERA, Indonesia



Prof. Dr Sumiani Yusoff,

Director, Institute of Ocean and Earth Sciences (IOES), University of Malaya, Malaysia.



AP Dr. Mohd Remy Rozainy Mohd Arif Zainol, Deputy Director, River

Engineering & Urban Drainage Research Center (REDAC), USM, Malaysia.



Prof Dr. Abd Elnaby Kabeel, Vice Dean,

Postgraduate and Research, Faculty of Engineering - Tanta University, Egypt.

Tuesday, 30th June 2020, 2 pm "Malaysia Time", 1 pm " Jakarta Time" and 8 am "Cairo Time"





UMSLLS Events 2020

July

RIMBA Ilmu's Redevelopment Meeting

Date: 2 July 2020 (Thursday)

Time: 11:00 am - 1:00 pm

Venue: TNC P&I Office



DISCUSSION ON RIMBA ILMU'S REDEVELOPMENT









RIMBA ILMU FACTS

- 80-hectare botanic garden
- established in 1974,
- Transformed from an abandon rubber estate to arguably one of the main ex-situ conservation site in Malaysia
- House to living collections of around 1700 species of plants
- Opening of a new building in 1997
- Adopts a rain forest theme
- Core collections in the garden include medicinal plants, palms, citruses (plants from the orange family), ferns and bamboos.
- Has a permanent exhibition called Rain Forests and Our Environment, a conservatory named as Rare Plants and Orchid Conservatory as well as a herbarium.
- Frequent collaborator: The Malaysian Nature Society



http://rimba.um.edu.my/virtual_tour.php

CONTRIBUTION TO UI GREENMETRIC:

Category 1: Setting & Infrastructure (SI)



1.10 Total area on campus covered in planted vegetation (%)

CONTRIBUTION TOWARDS TIMES HIGHER EDUCATION (THE) WORLD UNIVERSITY IMPACT RANKINGS - SDGS:

1) SDG15: Life on Land

15.2.2 Does your university as a body have policies to ensure that food on campus is sustainably farmed?

12.2.3 Does your university work directly to maintain and extend existing ecosystems and their biodiversity, of both plants and anima, especially ecosystems under threat?

15.2.4 Does your university as body offer educational programmes on ecosystems (looking at wild flora and fauna) for local or national communities?

15.3.1 Does your university as a body have a policy to ensure the conservation, restoration and sustainable use of terrestrial ecosystems associated with the university, in particular forests, mountains and drylands?

15.3.2 Does your university as a body have a policy to identify, monitor and protect any IUCN Red Listed species in areas affected by the operation of your university?

15.3.3 Does your university as a body include local biodiversity into any planning and development process (e.g. construction of new buildings)?

15.3.4 Does your university as a body have a policy to reduce the impact of alien species on campus?

15.3.5 Does your university as a body collaborate with the local community, e.g. through partnerships, in efforts to maintain shared land ecosystems?

2) SDG17: Partnership for the Goals

 $17.2.5\,\mathrm{Does}$ your university as a body collaborate with NGOs to tackle the SDGs through development of educational research

UM Living Lab Plastic Aggregates project 1st site visit at UM ZWC

Date: 8 July 2020 (Wednesday)

Time: 10:00 am - 11:00 am

Venue: UM ZWC Site





THE Impact Rankings Masterclass Malaysia Webinar

Date: 9 July 2020 (Thursday)

Time: 3:00 pm - 4:30 pm

Platform: Zoom



UMCares (UM Eco-Challenge) Award Post-Mortem Meeting

Date: 13 July 2020 (Monday)

Time: 10:30 am - 12:00 pm

Venue: UMCares Meeting Room, RMIC, UM





Water Warriors' media interview by The STAR

Date: 16 July 2020 (Thursday)

Time: 10:00 am - 11:30 am

Venue: Rumah No.2, Lorong 16/10B, UM















Plastic Aggregates Project (LL045-18SUS) site visit to UM ZWC





Date: 15 July 2020 (Wednesday)

Time: 10:00 am - 12:00 pm

Venue : UM ZWC



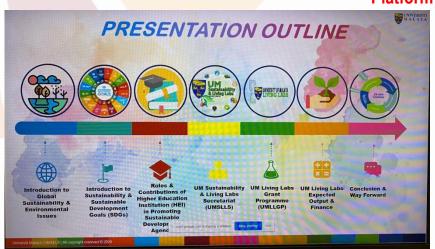




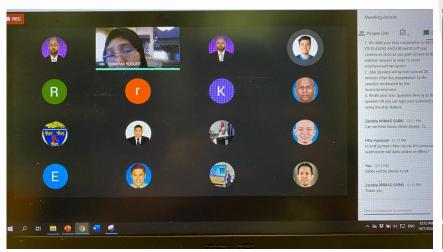
UM Living Labs Clinic 2020/2021

Date: 16 July 2020 (Thursday)

Time: 11:00 am - 12:30 pm









Plastic Disclosure Project (PDP): 1-2-1 Consultation between United Nations Environment Programme (UNEP), PDP (Ocean Recovery Alliance) and UM (UM ZWC)

Date: 17 July 2020 (Friday)

Time: 10:00 am - 12:00 pm





Smart and Green IoT Vending Machine Initial Discussion with UVendTech (M) Sdn Bhd (22/7/2020 Thursday 3:30pm)

Date: 22 July 2020 (Wednesday)

Time: 3:30 pm - 4:00 pm

Venue: UMSLLS Office



UMSLLS Sustainability Webinar 2

UMSLLS Sustainability Webinar Series 2: 'University as a SDG Living Lab on Water Management: The Experience of Water Warriors UM'

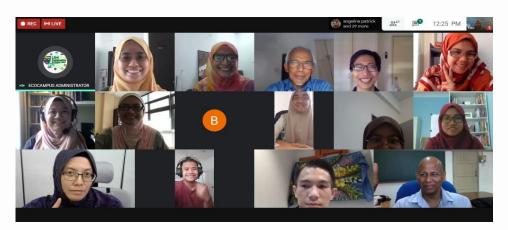
Date: 23 July 2020 (Thursday)

Time: 10:30 am - 12:30 pm









University as a SDG Living Lab for Water Management:

Principal Coordinator, UM Living Lab - UM Water Warriors

ASSOCIATE PROFESSOR DR. ZEEDA FATIMAH MOHAMAD

The Experience of UM Water Warriors

THURSDAY JULY 10:30AM

Google Meet



UMSLLS Events 2020

AUGUST

The Institution of Engineers Malaysia (IEM) Webinar on Advancing Engineering and Sustainable Development: A Way Forward for Sustainable World

Date: 12 August 2020 (Tuesday)

Time: 10:00 am - 12:15 pm

Platform: GoToWebinar



ADVANCING ENGINEERING

AND SUSTAINABLE DEVELOPMENT
- A WAY FORWARD FOR
SUSTAINABLE WORLD

SPEAKER:
PROF. DR. SUMIANI

Director. INSTITUTE OF OCEAN & EARTH SCIENCES (IOES) Chairperson. UM Sustainability & Living Labs Secretariat (UMLSS) 10 AM to 12 PM 25 AUGUST 2020

REGISTRATION FEES
(effective 1st August 2020)
IEM Member: RM 15.00
Non - Member: RM 70.00
Register online I www.iem.org.my



Rainforest Kids Challenge by MushClean – Community Participation in Action Research & Citizen Science of Water Warriors UM

Date: 18,19 & 25 July 2020 (Saturday)

Time: 10:00 am - 12:00 pm

Venue: UM GreenBelt







Follow up brainstorming session on Biodiversity & Landscape Management Project in UM with Dr Sarah & Dr Shakirin of Institute of Biological Sciences, Faculty of Science UM

Date: 19 August 2020 (Thursday)

Time: 2:30 pm - 3:30 pm

Venue: UM Sustainability & Living Labs Secretariat (UMSLLS)





UM - Ecoknights Follow up Discussion on Project VOCAL (Voice of Climate Action Leaders)

Date: 19 August 2020 (Wednesday)

Time: 11:00 am - 1:00 pm

Venue: UM Sustainability & Living Labs Secretariat (UMSLLS)





UMSLLS Events 2020

September

Green Cafeteria Site Visit

Date: 14 September 2020

Time: 10:30 am - 12:30 pm

Platform: Faculty of Business & Accountancy









Date: 21 September 2020

Time: 9:00 am - 2:00 pm









Date: 21 September 2020

Time: 9:00 am - 2:00 pm









Date: 21 September 2020

Time: 9:00 am - 2:00 pm









Date: 21 September 2020

Time: 9:00 am - 2:00 pm









Date: 21 September 2020

Time: 9:00 am - 2:00 pm















"Universiti Malaya, and all members of the University, is fully committed in our journey towards a truly sustainable Public Higher Education Institution by integrating Sustainable Development Goals (SDGs) in our teaching & learning, research, operations, governance, community engagement and leadership"