UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SUSTAINABILITY REPORT 2020

Localisation • Alignment • Implementation

SUSTAINABILITY REPORT 2020
UNIVERSITI TEKNOLOGI MALAYSIA

UTM Sustainability Report 2020

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This report is dedicated to the UTM community

who have passionately charted a course on sustainability for the university – on campus, online, and wherever they are

as well as

future students, staff, and collaborators, within the country and beyond.

May all our efforts be blessed and rewarded here, and the Hereafter.

Report Contents

Foreword

Preface

Section 1

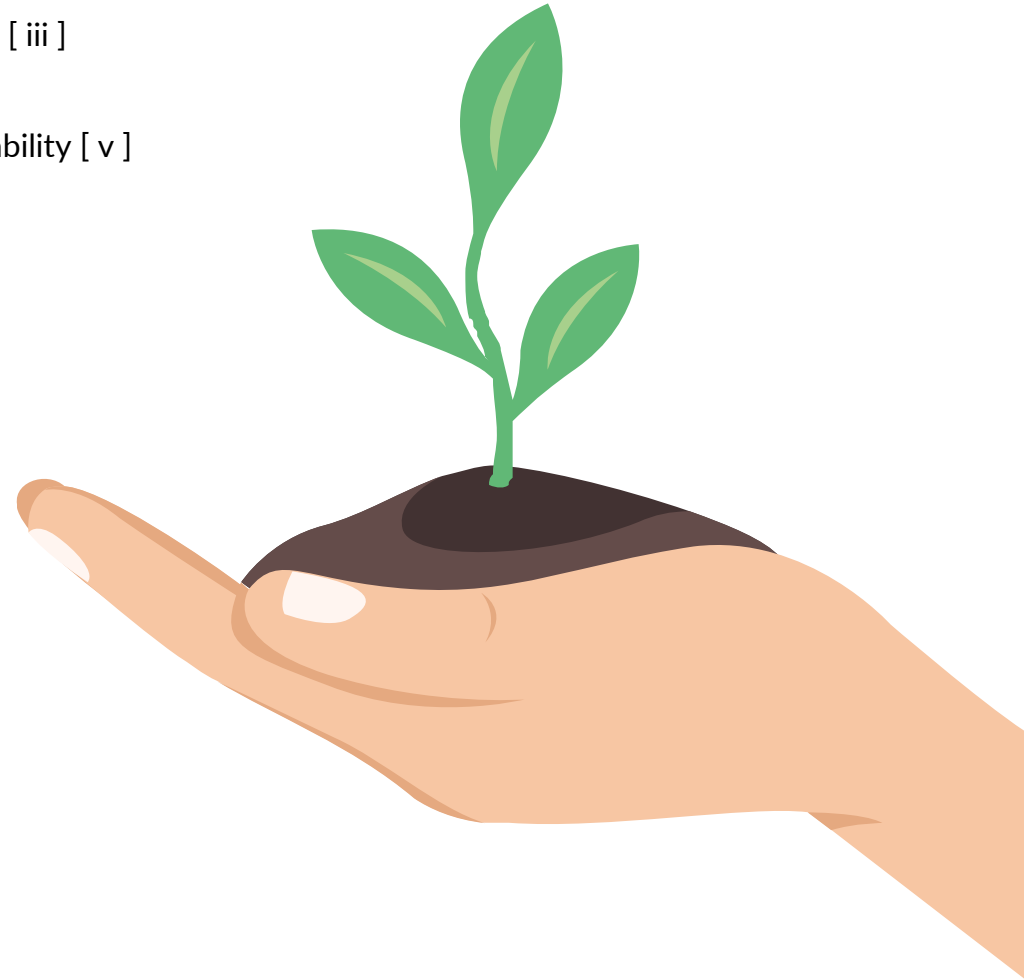
Section 2

Prof. Datuk Ts Dr Ahmad Fauzi Ismail, 7th UTM Vice Chancellor [iii]
Prof. Datuk Ir. Dr Wahid Omar, 6th UTM Vice Chancellor [iv]

Prof Ir Dr Mohd Fadhil Md Din, Director, UTM Campus Sustainability [v]

Institutional Commitment towards Campus Sustainability [1.2]
Localising SDG in Higher Education [1.3]
Why Is This Report Important to Us [1.4]
Reporting Framework [1.5]
How is This Report Prepared [1.6]

Introduction to UTM – vision, mission, core values [2.2]
UTM At A Glance [2.3]
The Academic Space [2.4]
The Research Space [2.6]
The Shared Space [2.8]
The Biodiversity Space [2.12]
The Ecotourism Space [2.14]
Rethinking The Consumption In Our Space [2.15]
Summary [2.16]



Report Contents

Section 3

The UTM Response [3.2]
Sustainability Operation Monitoring Framework [3.3]
Sustainability Pillar [3.4]
Sustainability in UTM Strategy [3.5]
Campus Sustainability Steering Committee [3.7]
Chronology [3.8]
UTM Campus Sustainability Policy [3.9]
Localisation of SDGs At UTM [3.10]
Summary [3.12]

Section 4

Implementing sustainability at UTM – from the perspective of UTM divisions. There are five dimensions covered:

- Governance [4.2 -4.7]
- Conceptualisation [4.8 - 4.10]
- Implementation [4.11 - 4.22]
- Service provider [4.23 - 4.29]
- Data collection, analysis & reporting [4.30 - 4.40]

Summary [4.41]

Section 5

UTM Campus Sustainability Role [5.2]
Way Forward [5.4]

Foreword

Prof. Datuk Ts Dr Ahmad Fauzi Ismail
7th UTM Vice Chancellor (1 January 2021 - present)

More than 1,400 years ago, our beloved Prophet Muhammad (PBUH) has reminded us to act sustainably, and to act in a way that will environmentally benefit us and those around us.

The Prophet (PBUH) also leads by example. He would perform ablution with one mudd (half a kilogram of water), and a ritual bath with one sa' (two kilograms of water), up to five mudd (two and a half kilograms of water). Instead of discarding worn-out clothing items, He would repair and reuse them. He encouraged His disciples to plant trees as a charitable gift not only to the community, but also to other living creatures. Cleanliness is a virtue highly regarded by the Prophet (PBUH); so as caring for animals and plants, as well as keeping each other safe from harm.

I am delighted that our students and staff are proactive in initiating and organising activities that relate to sustainability. As reported throughout the course of this report, they have embraced sustainability as a core value, and are keen to support and contribute to the well-being of local and global communities.

As such, I would like to express my deepest appreciation and gratitude to the UTM community for their commitment and dedication.

Thank you for making a difference!

Notwithstanding our achievements, we should never be complacent. There are many communities who have yet to embrace and adopt sustainability as a way of life.

As learned individuals, we must follow through the footsteps of our beloved Prophet (PBUH), and invite members of the community to work together with us.

There are many ways to inspire them through our core work in teaching, research, and community engagement. We have to show the way and earn their trust, so that the propensity for change is driven from the community itself.

I trust that UTM Campus Sustainability is capable of accelerating the sustainability agenda not only within the campus community, but also across communities within and outside Malaysia.

Congratulations for publishing such a timely and important report, and all the best in the future!

Prof. Datuk Ir. Dr Wahid Omar
6th UTM Vice Chancellor (September 2013- August 2020)

When I took over the role of UTM Vice Chancellor in 2013, 'sustainability' was among the highest priority. It was not only for the institution to be sustainable, but more importantly the opportunity to educate students and campus community about sustainability living.

At that time, we were tasked to work on a number of initiatives on financial sustainability, in response to the dwindling public funds allocated to the university.

The sector was also rapidly disrupted through the emergence of Massive Open Online Courses (MOOCs), innovative higher education financial models, and the Fourth Industrial Revolution, among others.

To remain relevant, UTM had to be sustainable beyond financial means, which means a system-level change across the institution.

The UTM community is at the heart of any transformation agenda. We had to change habits and influence behaviours of individuals and communities, as their mindset is key to the success of sustainability initiatives organised in the university.

This underlined my team's intent to connect with the different offices in UTM through periodical engagement sessions throughout the year, whenever the schedule permits.

In other instances, discussions may not work. We had to be creative in exploring options that induce the whole-of-institution change. This may involve the use of 'carrots', or incentives that reward positive behavioural change, or 'sticks', top-down directive from the UTM management team.

UTM Campus Sustainability was one of the top-down initiatives which was established within one year of my appointment to office.

The establishment of this office came timely, as the United Nation's Sustainable Development Goals (SDGs) was adopted by all UN member states in 2015 – which means Malaysia, as a signatory, is expected to respond and contribute through the 17 goals outlined under the global agenda.

I am grateful for the leadership of Prof. Fadhil, as the Director for UTM Campus Sustainability, as well as his dedicated team members in bringing SDG to UTM, consequently localising and coordinating all efforts with regard to the global agenda, despite the limited resources and manpower accorded to the office.

Congratulations to UTM Campus Sustainability for documenting the university's sustainability efforts through this publication!

Preface

Prof Ir Dr Mohd Fadhil Md Din
Director, UTM Campus Sustainability

UTM Campus Sustainability believes in the following three "commandments" when conceptualising and strategising on projects related to sustainability:

#1: Know yourself, the size of your plate, and what is currently available on your plate.

More often than not, 'sustainability' encompasses a whole range of issues and areas to work on. With limited resources – time, attention span, political will, manpower, and budget, among others – we need to drive transformation from the bottom-up. This involves identifying our strengths and weaknesses, where we stand in terms of governance, policy, and expertise, as well as what is/are currently implemented by the UTM community.

#2: Know what, when, and who to fight, and build alliances to support your cause.

Since our inception in 2011 as Campus Sustainability Unit, my office receives great support from the UTM top management in terms of policy and projects related to sustainability. We have had successes that we are proud of, as well as non-achievements that motivate us to work harder and smarter in the future.

We are also grateful for both domestic and international networks which have supported us in our growth. Being informed about developments occurring locally and abroad through our networks have significantly supported us in making the right decisions not only for the office, but also for the university.

#3: Reflect, share, celebrate, and constantly improve.

The UTM Sustainability Report 2020 is our effort to acknowledge the contribution of the university community in making sustainability an integral part of their day-to-day tasks and responsibilities.

It was in 2013 that UTM Campus Sustainability was established at UTM. Within a short period of seven years, we have rallied the whole campus community to work with us on the campus sustainability agenda.

I would like to take this opportunity to thank my team members who have worked tirelessly to realise objectives and aspirations of UTM Campus Sustainability throughout the years. They are also instrumental in seeing through the publication of this report to the end, together with representatives from various divisions across UTM.

We still have a long way to go. However, I believe that we are on the right track towards a sustainable future. Let us work together for the good of UTM, shall we?

1

About the report

Introduction

Institutional Commitment towards Campus Sustainability

Back in 2009, UTM initiated its first project on sustainability through two campaigns: the first being a paper reuse/recycle initiative, and the second being an energy reduction/saving initiative.

In the following year, the UTM Campus Sustainability Policy was introduced. A unit called the Campus Sustainability Unit was established. It was tasked to oversee implementation of the policy campus-wide, and report to the Office of Assets and Development.

Sustainability-related initiatives gained traction from 2011 onwards, starting with the launch of UTM Energy Policy on 29 May 2011, and three Living Labs at UTM:

- Living Lab 1: Sustainable Arcade
- Living Lab 2: Green Office
- Living Lab 3: Sustainable Energy Management

Each living lab was designed to incorporate three pillars of sustainability: social, economic, environmental.

UTM became the first organisation receiving 1-Star EMGS AEMAS rating at the Malaysian Green Technology Corporation (MGTC) Seminar on Energy on 29 August 2011. Subsequently, UTM was awarded a 2-Star EMGS AEMAS rating at the MGTC Seminar on Energy on 29 January 2013.

In 2013-2014, the Living Lab concept was expanded to include another three new Labs:

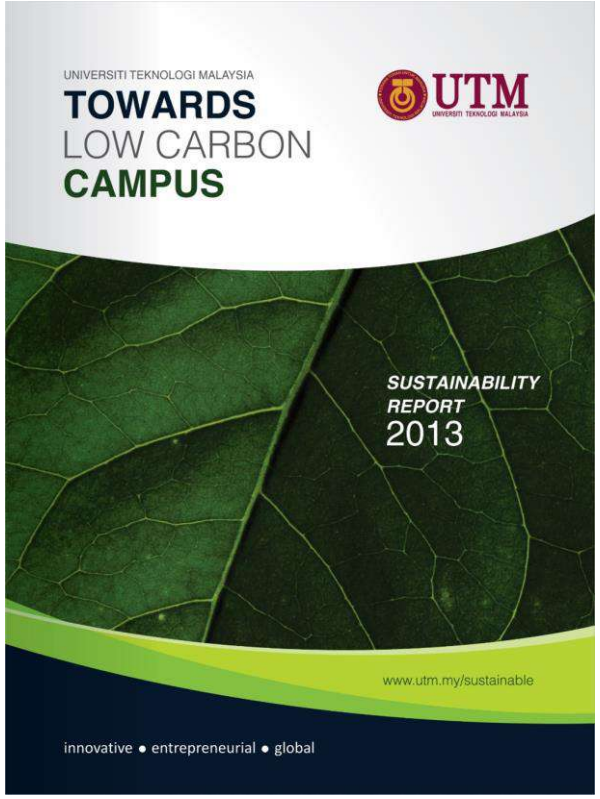
- Living Lab 4: Bio-recycling centre
- Living Lab 5: Green School
- Living Lab 6: Green community

The Campus Sustainability Unit was then elevated into Office of Campus Sustainability, a cost centre with greater responsibilities on the campus sustainability agenda. It was tasked to report directly to the Office of Deputy Vice Chancellor (Development).

Two more Living Labs were added later:

- Living Lab 7: Sustainable transport
- Living Lab 8: Biodiversity

As a strategic move to further strengthen sustainability efforts campus-wide, UTM Campus Sustainability was officially placed under the Chancellery Department in year 2019.



A flowchart chronicling UTM's experience on sustainability between 2009-2013 is available in this report. Source: UTM Campus Sustainability

Localising SDG in higher education

The Sustainable Development Goals (SDGs) was adopted by all UN Member States in 2015, as part of the 2030 Agenda for Sustainable Development which set out a 15-year plan to achieve the Goals.

Through the SDGs, countries pledged their commitment to a total of 169 time-bound targets under 17 global. The Sustainable Development Solutions Network (SDSN) further classified the global goals into six transformation agenda, with the assumption that each transformation contributes to several SDGs and is synergistic with others.

The six transformation has a single principle of leaving no one behind, and to ensure that the Goals are localised in their implementation.

The mapping of six transformation agenda and the Goals are as follows:

Transformation agenda	SDG
Education, gender, and inequality	1, 5, 7-10, 12-15, 17
Health, well-being, and demography	1, 2, 3, 4, 5, 8, 10
Energy decarbonisation and sustainable industry	1-16
Sustainable food, land, water, and oceans	1-3, 5, 6, 8, 10-15
Sustainable cities and communities	1-16
Digital revolution for sustainable development	1-4, 7-13, 17

Chankseliani and McCowan (2021), in their editorial entitled *Higher Education and the Sustainable Development Goals*, recommend higher education institutions (HEIs) to do the following:

i. Acknowledge the variation in the capacity of higher education institutions to imagine, design, implement, and promote the links between universities and development for social change;
ii. Identify the local, indigenous contexts that affect SDG interpretation and implementation; in other words, 'viewing the global from the perspective of the local, and viewing the local from the perspective of the global' (pg.4);
iii. Document the wide variety of activities relevant to sustainable development, and to assess their alignment with teaching, research, community engagement and campus operations;
iv. Conduct rigorous research to gauge the impact of SDGs on society; and
v. Be mindful of national and local priorities, and not being explicitly driven by the SDG framework.

Why is this report important for us

We have an obligation to **report on current progress and development** with regard to sustainability at UTM

We have to show the UTM community that **everyone has a role to play** in realising the sustainability agenda at UTM, and ensure that **nobody is left behind** in this journey

We would like to invite the UTM community to join us in **co-creating a culture that strengthens our sustainability efforts** within the campus

We believe that **our experience should be shared** on the public domain, so as to benefit other institutions / organisations who are embarking on similar paths

We would like to **seek greater collaboration with stakeholders outside UTM**, in order to drive the sustainability agenda together

Reporting framework

RECOGNITION	OPPORTUNITIES		ORGANISING PRINCIPLE	
STEP 1: Map what you are already doing	**STEP 2:** Build capacity and ownership of the SDGs	**STEP 3:** Identify priorities, opportunities and gaps	**STEP 4:** Integrate, implement and embed the SDGs	**STEP 5:** Monitor, evaluate and communicate
What are the key contributions that UTM has made (in relation to sustainability) within the context of the following areas? 1. Education 2. Research 3. Operations and governance 4. Future-ready leadership/talent	Out of the 17 goals, 169 targets, and 244 indicators, what are the indicators that are within the expertise and resources available at UTM? How might UTM integrate these indicators within existing institutional strategic plan [UTM enVision 2025]?	What are UTM's strengths? What can the UTM community do better, in order to strengthen its involvement and contribution in the overall sustainability agenda? Where should UTM concentrate its efforts and investments in the future?	How might UTM envision an appropriate concept / framework that enables the campus community to view sustainability as a way of life, rather than a check-list / reporting exercise?	How might UTM Campus Sustainability - as the main office mandated to oversee strategic direction and implementation on sustainability at UTM – better manage monitoring, evaluation, and communication processes in the university?
Refer: Section 2 of this report	Refer: Section 3 of this report	Refer: Section 4 of this report	Refer: Section 3 of this report	Refer: Section 5 of this report

Scan QR code to access "Getting Started with the SDGs In Universities: A Guide For Universities, Higher Education Institutions, And The Academic Sector (Australia, New Zealand & Pacific Edition)" report, which described this process in detail (pg.31-34)

How is this report prepared?

Identify
(Sept-Oct 2020)

Outline – sections / chapters to be reported

Work flow – report publication process

Resource – budget, manpower, time required for completion

Team – consultants to prepare the report, through an open bidding process

Source
(Sept-Oct 2020)

Information – via reporting template distributed to selected offices in UTM

Meeting #1 – expectation setting on format, outline & contents of the report

100% online

Develop the story
(Nov 2020)

Interviews – a total of 15 sessions with various entities were conducted throughout this month to identify additional information beyond that reported in the template

Meeting #2 – presentation and discussion of outline appropriate for report, after going through input from the 15 interview sessions

Consolidate
(29 Nov 2020)

Draft writing, fact checking & corrections, editorial & publication – consultants & UTM Campus Sustainability work together to prepare the report

Putting it together
(Dec 2020 – Mid May 2021)

2

The space we call UTM

UTM vision, mission, core values

Philosophy

The divine law of Allah is the foundation of knowledge. In line with His Will, UTM strives with total commitment to attain excellence in science, technology and engineering for the well-being and prosperity of mankind.

Vision

To be a premier global academic and research institution, excelling in science, technology and engineering..

Mission

To lead in the development of holistic talents and innovative technologies for universal well-being and prosperity.

Core values

Integrity calls for adherence to sound moral values and strong ethical principles. This noble virtue must be internalised in our heart and soul, and manifested in our loyalty, character, conduct, deeds and action with wisdom and trustworthiness.

Synergy instills team spirit, togetherness, inclusivity, collegiality, respect, humility, cooperation and collaboration. It also breeds selflessness, resulting from care and concern for others above self, while embracing diversity and appreciating differences.

Excellence towards high performance and delivery will result in outstanding and remarkable achievement in all aspects of learning and teaching, research, innovation, commercialization and provision of services.

Sustainability is reflected in the holistic drive by the campus community in integrating and balancing economic, social and environmental spheres to meet the current needs without compromising the ability to exist and survive continuously.

Scan QR code for UTM official website

UTM at a glance

UTM
UNIVERSITI TEKNOLOGI MALAYSIA

14.03.1972 Date of establishment

3 campuses in Johor Bahru, Kuala Lumpur, and Pagoh, with a total size of **1,144.4** hectares

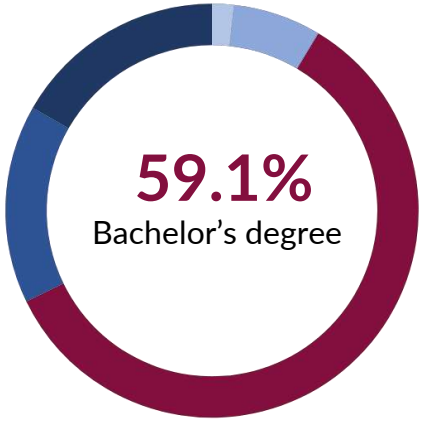
55 undergraduate programmes and **167** postgraduate programmes delivered by **7** faculties

27,069 Total students, of which **18,341** of them are undergraduates and **8,728** of them are postgraduates

4,437 of the students are international students, with over **2,502** of them are pursuing their studies at the postgraduate level

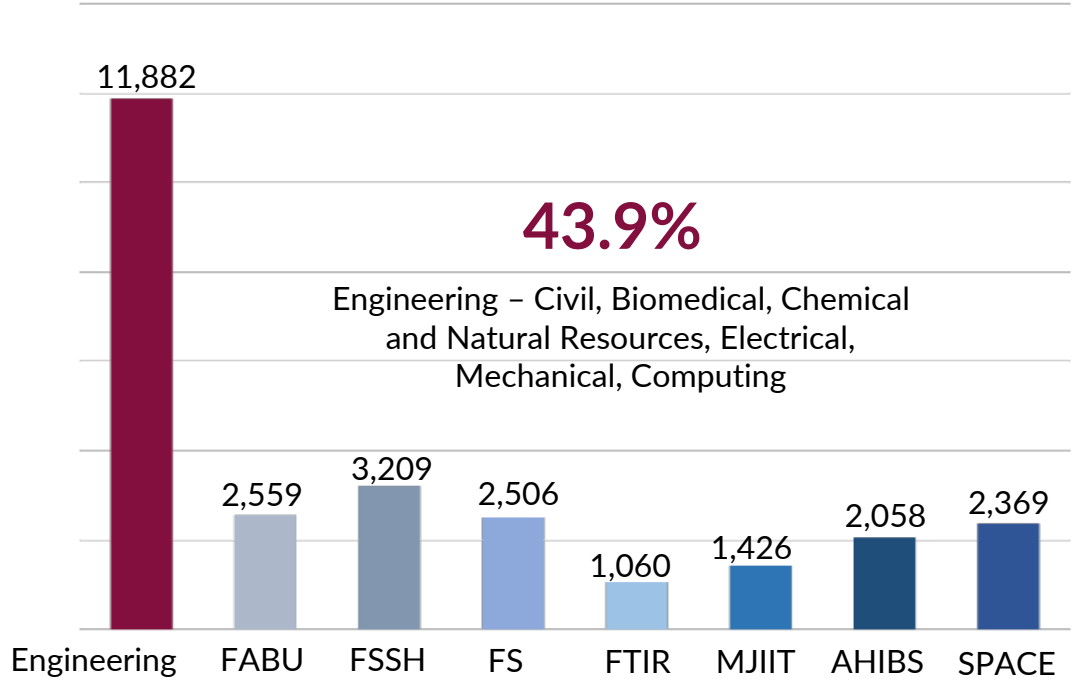
4,742 Total staff, of which **3,193** of them are in professional services. **1,549** Total academic staff, of which **48** of them are international

The academic space



- Foundation (1.7%)
- Diploma (6.9%)
- Master's degree (15.5%)
- PhD (16.7%)

16.4% of UTM students are international



FABU = Faculty of Built Environment and Surveying
FSSH = Faculty of Social Science and Humanities
FS = Faculty of Science
FTIR = Razak Faculty of Technology and Informatics
MJIIT = Malaysia-Japan International Institute of Technology
AHIBS = Azman Hashim International Business School
SPACE = School of Professional and Continuing Education

New Academia Learning Innovation (NALI) practices implemented at UTM

1. Case study teaching
2. Problem-based learning
3. Scenario-based learning
4. Peer instruction
5. Service/community-based learning
6. Conceive, Design, Implement, Operate (CDIO)
7. Outcome-based education (OBE)
8. First year experience
9. Job creation
10. Writing-intensive courses
11. Collaborative assignments/projects
12. Empirical research
13. Diversity/global learning
14. Interdisciplinary approach to assessment
15. Industrial training
16. Capstone project

Image: UTM Office of Corporate Affairs

The Research Space

Indicator

Total papers published — X

Total grants — Y

SDG Goals

1,097 Total papers published

1,522 Total grants

38,599,534.54

Amount (RM) of grants

*Data not applicable

Source: Department of Deputy Vice Chancellor (Research and Innovation) – using SCOPUS-customised query data submitted for Malaysia Research University Assessment (MyRA) 2020, an annual performance assessment exercise for all public research universities in Malaysia

Image: Kai

The shared space

Floor space

807 Total number of buildings

1,127,900 m^2

Recreational space

4.1km Pioneer's trail

6.0km Inventor's trail

1.2km Scholar's trail

5.0km Philosopher's trail

Digital space

UTM Johor Bahru

1.6Gbps Average bandwidth / day

5,200 Average users / day

UTM Kuala Lumpur

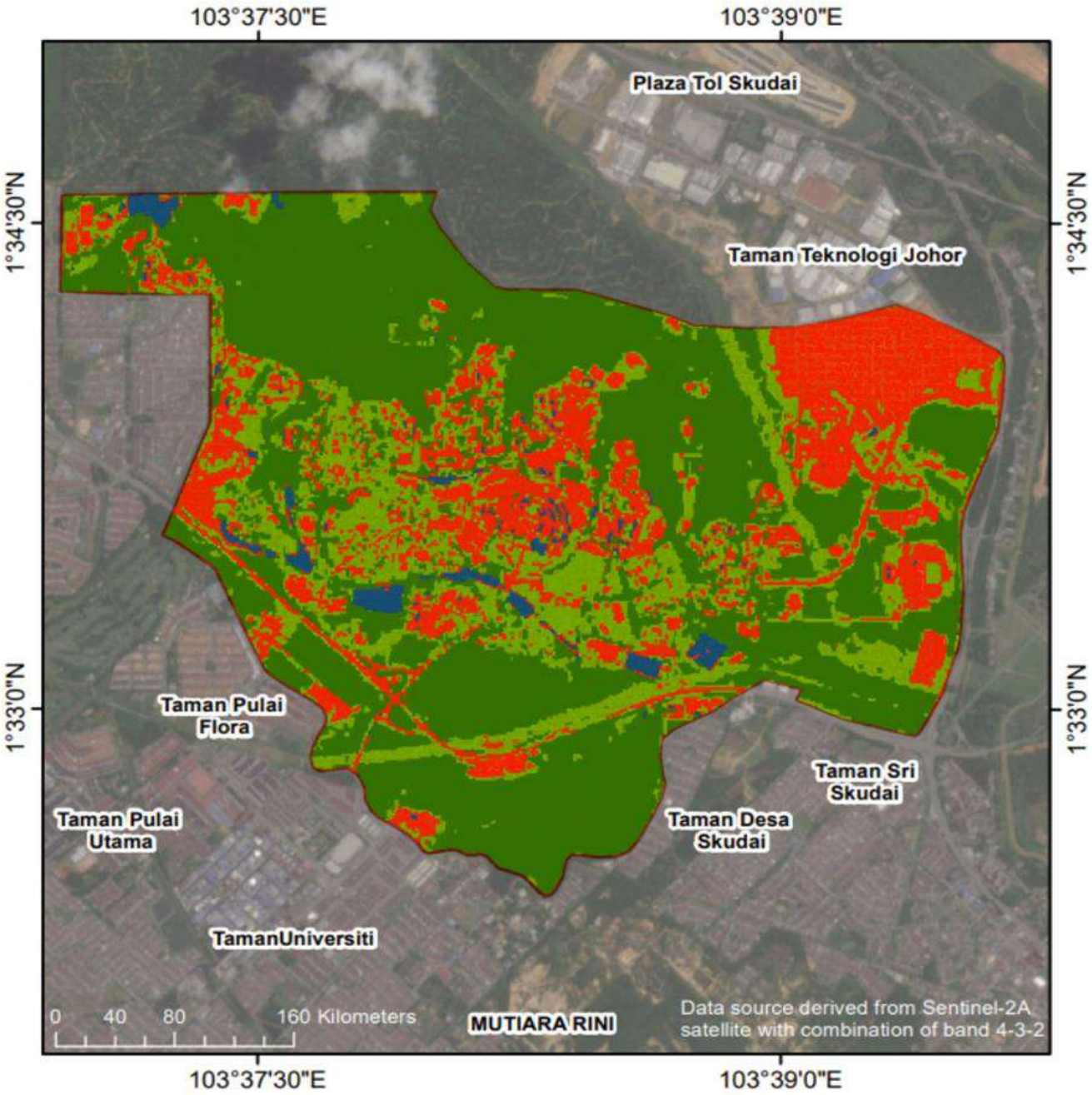
0.37Gbps Average bandwidth / day

2,009 Average users / day

Institutional repository

57,839 Files deposited to date

Source: Floor space & recreational space – Office of Asset and Development; Digital space – UTM Digital (UTM JB and KL related data) Institutional repository - UTM Data Exhibit 2020 (prepared for UTM Board of Directors Retreat 2020)



	Percentage per total area	Area (km^2)
Total area on campus covered in forest vegetation	52.60	6.19
Total area on campus covered in planted vegetation	23.44	2.76
Total area on campus covered for water absorption besides forest planted vegetation	21.80	2.56
Lake, river, etc	2.16	0.25

Water absorbed area without vegetation

Water

Natural/Planted forest

Planted vegetation excluding forest

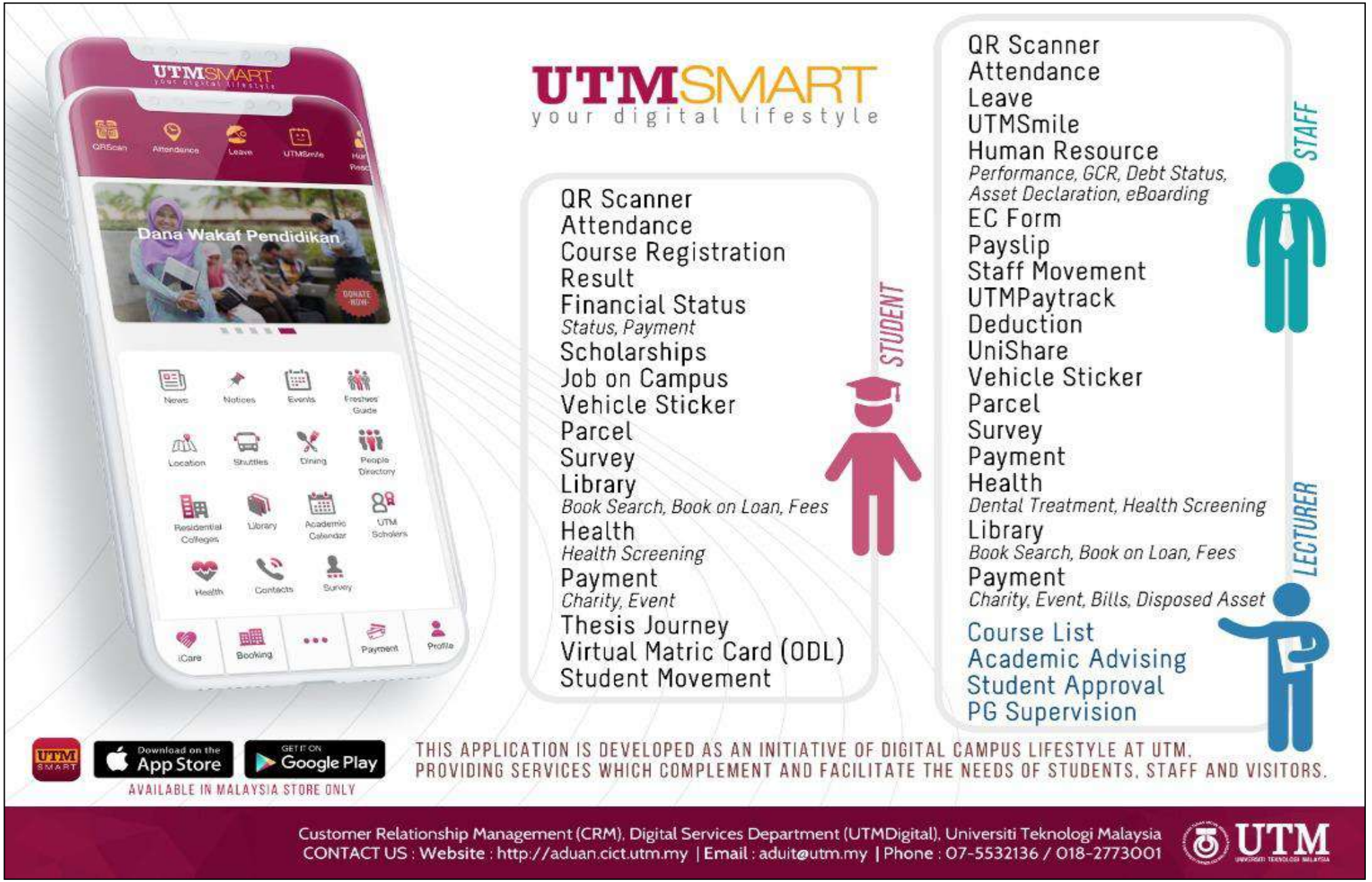
Source : Geoscience and Digital Earth centre (INSTeG)

Image: Universiti Teknologi Malaysia

The spiritual space

The UTM motto is *Kerana Tuhan Untuk Manusia,* or In the Love of God for Mankind. This motto inspired developers to situate the Sultan Ismail mosque as the centrepiece of the UTM Johor Bahru physical campus. The mosque enables new students and visitors to find their way around the campus easily, using the domes of the mosque as wayfinders. The Sultanah Zanariah library was built next to the mosque as a reminder to its community that knowledge must be prioritised after one's religious servitude to God.

Scan QR code for a 2007 study on sustainable campus design for public higher education institutions in Malaysia, where UTM was one of the case studies identified.



UTM in the digital space

The campus has gone digital – many of its services, once conducted over-the-counter, are done digitally today. This transition occurred since 2017 in order to enable easy access of services to staff and students.

Image: UTM Digital

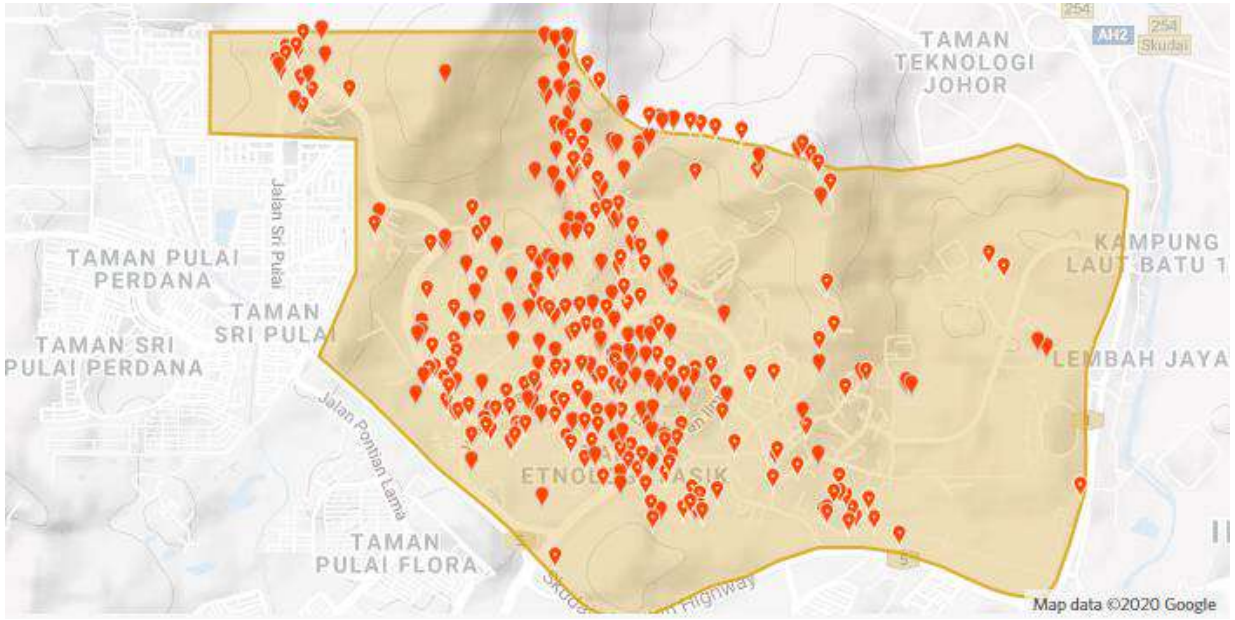
The biodiversity space

iNaturalist

436 Number of species identified in UTM

203 Number of observers participating

1,837 Number of observations made



Map showing observations made on various flora and fauna across the UTM Johor Bahru campus.

The UTM Johor Bahru campus is blessed with rich biodiversity, with over 52.6 percent of total campus area covered in forest vegetation, planted vegetation area covering total of 23.4 percent, 21.8 percent water catchment area (except forests and greeneries) and 2 percent is lake and rivers.

Prof. Dr. Rafee Majid at the Faculty of Built Environment and Surveying (FABU) designed a project whereby students are required to take photos of flora and fauna species found on campus, and upload the photos to the iNaturalist website, as one of the volunteerism activity inside campus under Living Lab 8. Communities on the website, who are adept at identifying genus of the flora and fauna, would then name the assortment of animals and plants.

This crowd-sourcing effort eventually led to an inventory of UTM biodiversity, uncovering various identified species residing in UTM Johor Bahru. It also highlighted the importance of sustainable campus planning in order to care for the rich biodiversity within the campus compound.

Scan QR code to access UTM Biodiversity page on iNaturalist

Among the species observed on the UTM JB campus:

Species: Plantain Squirrel/*Callosciurus notatus*/Tupai Kampung (Albino individual)
Location: Block B12, FABU
Date: July 20, 2020
Observer: Sazali

Species: Little Egret/Egretta garzetta/Bangau Kecil
Location: UTM Lake
Date: Feb 22, 2020
Observer: MunimZabidi

The ecotourism space

Scan QR code for more information about UTM Edutourism initiatives

Rethinking the consumption in our space

Solid waste management

Percentage of total solid waste reduction (Metric Tonne)

2020 :

- 42.68%

Electricity management

Percentage of total cost electricity consumption reduction (RM)

2020 :

- 29.95%

Water usage

Percentage of total cost water consumption reduction (RM)

2020 :

- 8.38%

Resource Consumption in 2020 Compared to 2019

Summary

Recap (see Reporting Framework, 1.5)

RECOGNITION

STEP 1:
Map what you are already doing

What are the key contributions that UTM has made (in relation to sustainability) within the context of the following areas?

1. Education
2. Research
3. Operations and governance
4. Future-ready leadership/talent

A campus is a place where individuals and groups gather to build comradeship individuals toward a common cause or experience. It has its own complete life system, and can comprehensively promote and implement sustainability across all facets of the campus.

At UTM, sustainability started at the financial level, back when funding for higher education was reduced across all public HEIs.

It is high time that the concept of sustainability is extended beyond financial dimensions, leveraging various platform of researches, programmes, community-based learning and industrial linkages to move the sustainability agenda beyond the 2030 Agenda for Sustainable Development .

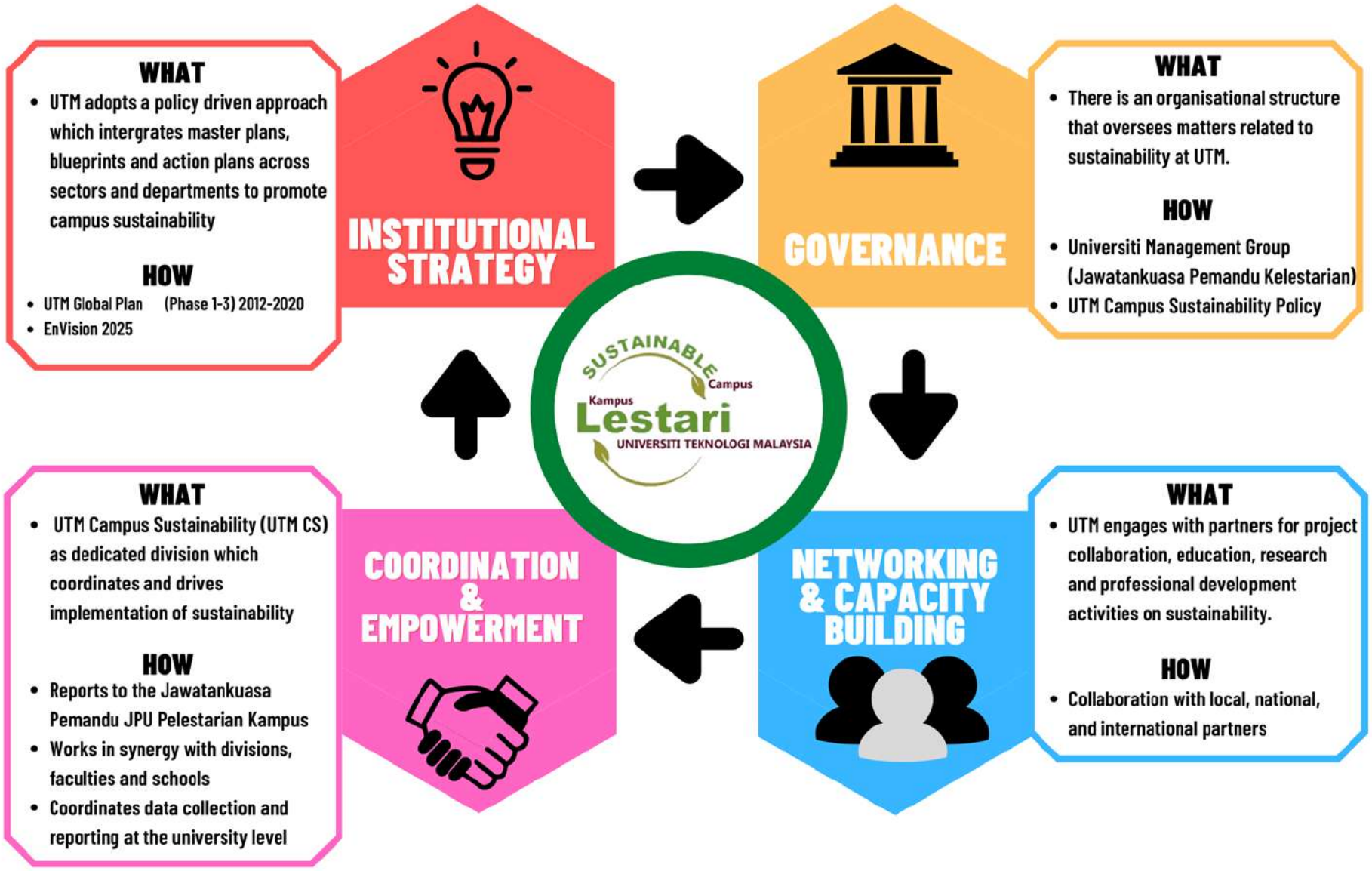
In this respect, the key takeaways for the UTM community are as follows:

1. Identify the dynamics of 'spaces' available as sustainability can be interpreted differently in each of the space:
   - Academic space
   - Research space
   - Physical space – floor space, recreation space
   - Biodiversity space
   - Digital space
   - Collaborative space
2. Live coexist with one another – particularly since they are sharing the campus with a diverse range plants and animals
3. Aware and share responsibility with what we consume and discard in their daily campus activities

3

Committing to sustainability

The UTM Response



Sustainability Operation Monitoring Framework

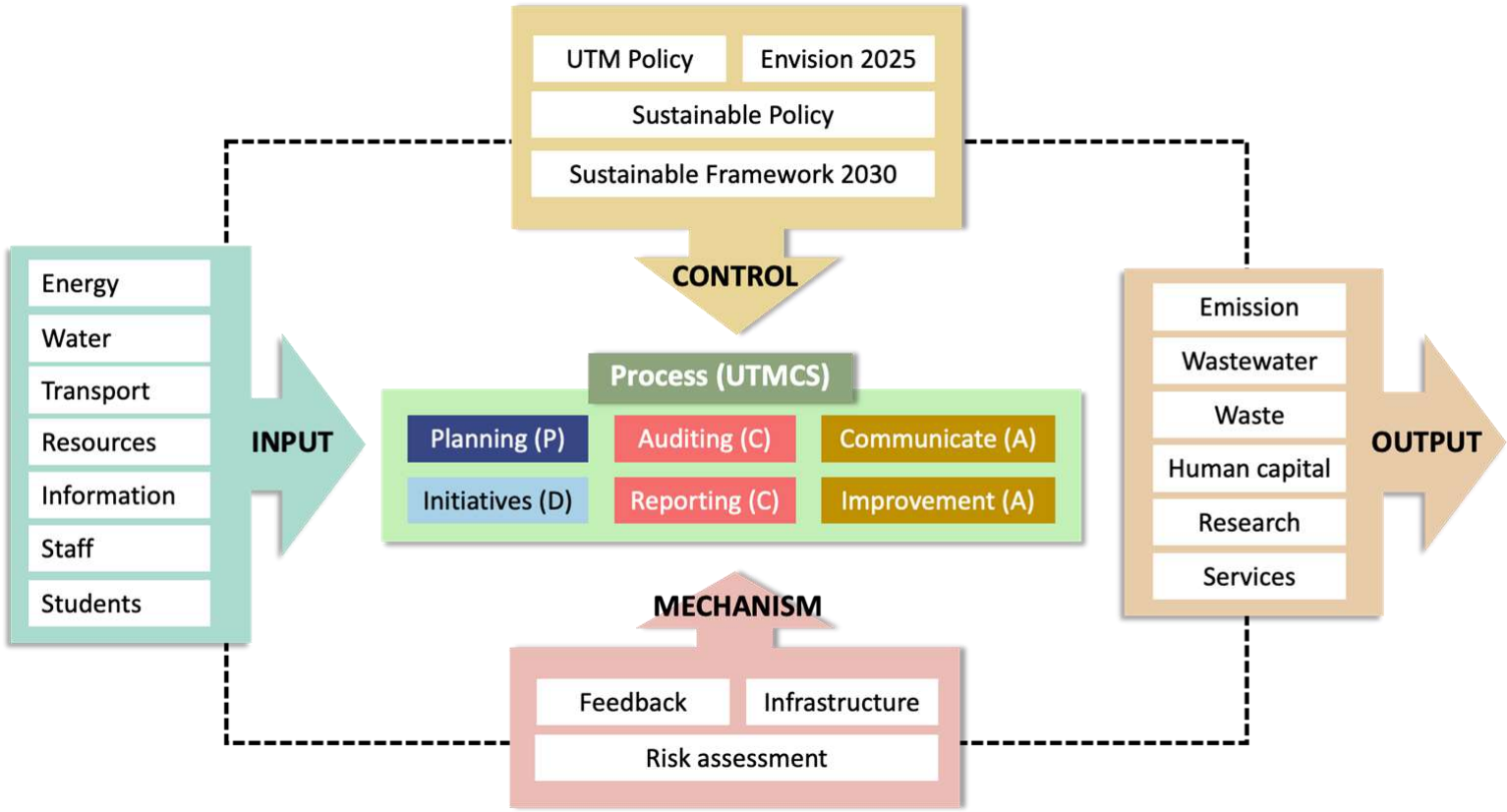
Sustainability operation model out basic ICOM codes diagram:

Input
Materials and resources to monitor in campus

Control
Guide or direct process work

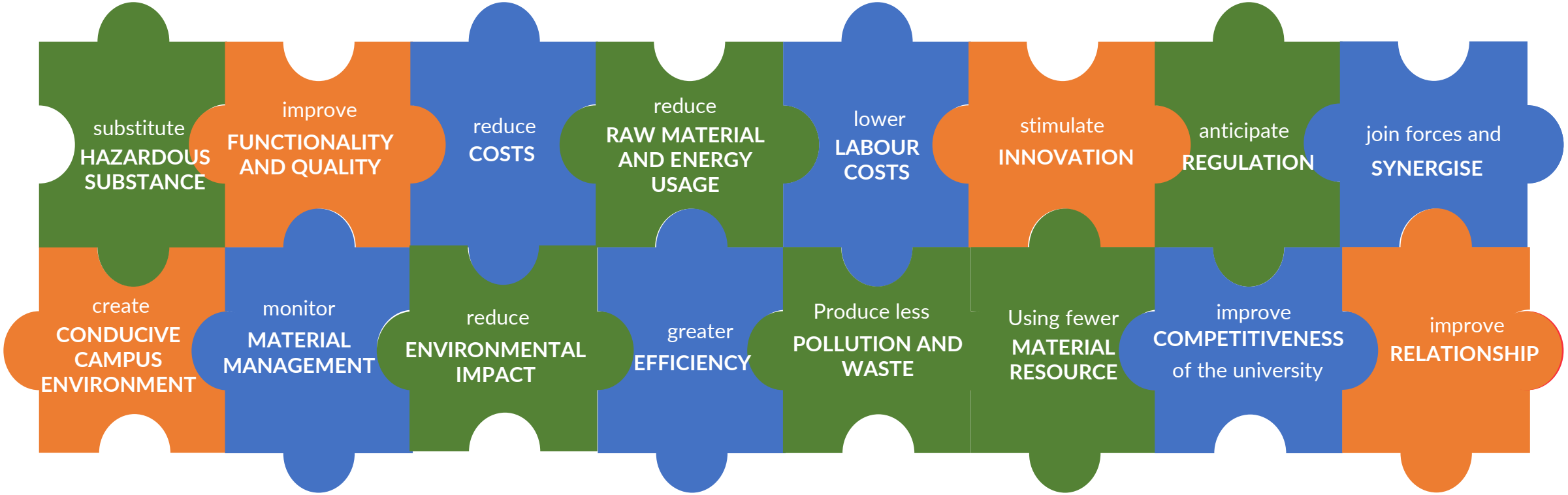
Output
Results of activity are transmitted

Mechanism:
Cause the process to operate



Sustainability Pillars

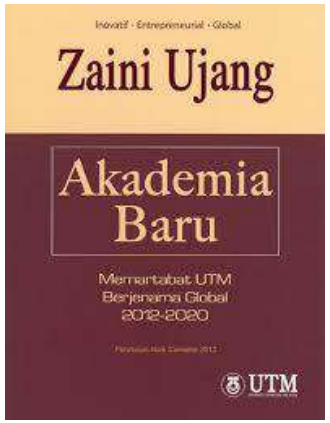
There are three pillars of sustainability, which motivate UTM Campus Sustainability in advising, planning, and designing sustainability-related activities for the university :



Sustainability in UTM Strategy

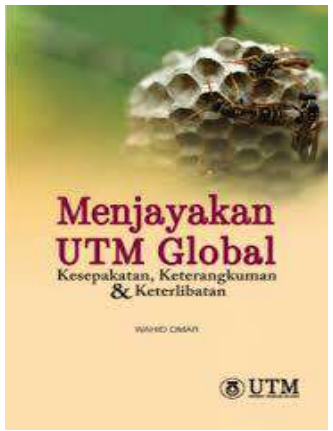
At the institutional level, sustainability is a consistent theme in UTM's strategy since 2012:

UTM Global Plan (Phase 1, 2012-2014)



2012

2013



2014

This stage marks the first stage of UTM's long-term institutional plan, formulated after the university attained Research University (RU) status in 2010.

At this stage, the university focused on building the necessary foundation in strengthening its new role as the fifth public research university in Malaysia.

UTM Global Plan (Phase 2, 2015-2017)

2015

2016

2017

This is the second stage of the university's strategic plan.

Sustainability was an important agenda at this stage. In this context, "sustainability", refers mainly to

- Financial sustainability – in order to manage the reduced public funding experienced by Malaysia's higher education system
- Sustainable development – in response to the 2030 Agenda on Sustainable Development in 2015, and maintaining the university's excellence as a research university

UTM Global Plan (Phase 3, 2018-2020)

2018

2019

2020

This is the third and the last stage of the UTM Global Plan.

At this stage, the university accumulated a wealth of experience in integrating sustainability into its strategic plan. It also has institutionalised strategy throughout its community, campus wide; from paperless initiatives, car-free days, recycling stations, and green managers, among others.

It takes time to change behaviour – but small steps can lead to lasting impact in the long run.

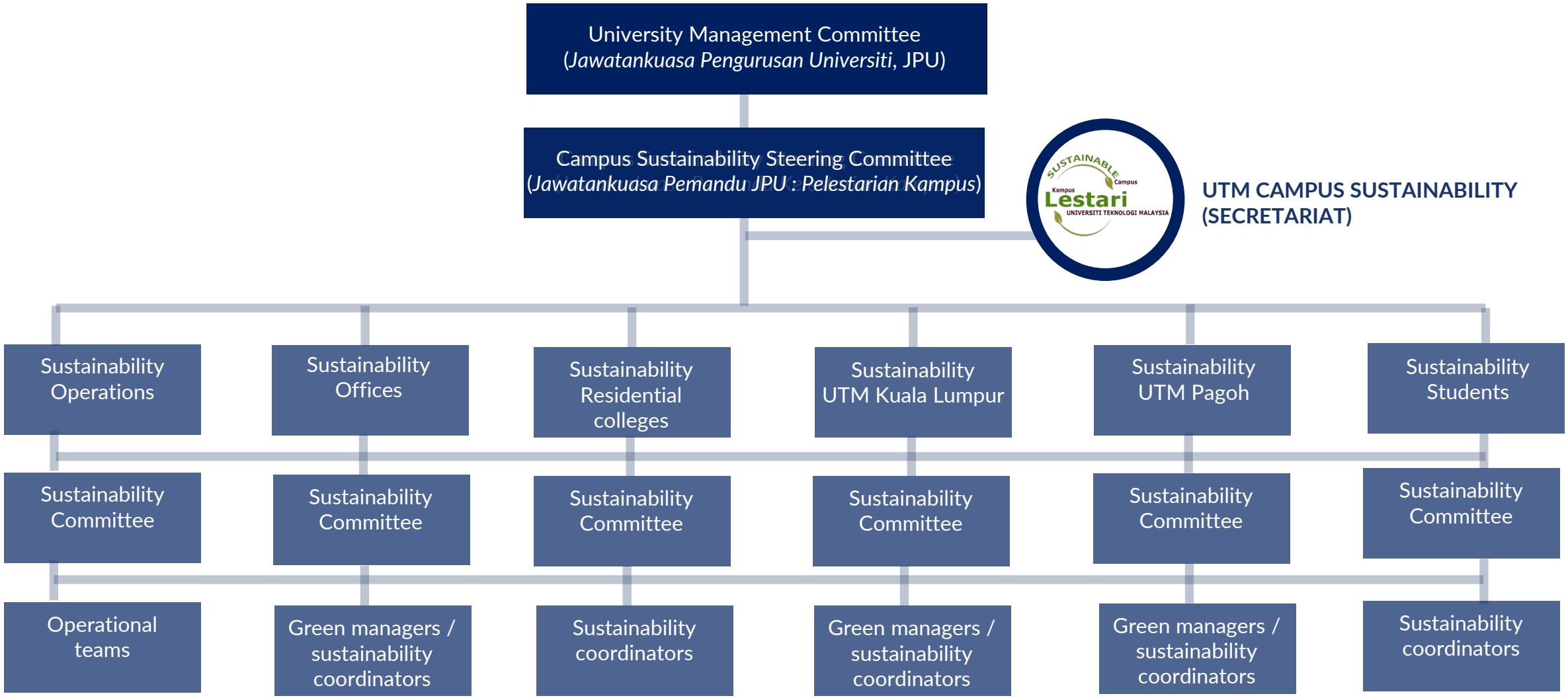
enVision 2021-2025

2021-2025

The University sustainability agenda is continued under this strategic plan, through eight strategic priorities which are linked to five interrelated strategic thrusts, namely (1) World-class Holistic Talents to extend the Frontier of Education and Research; (2) Creative and Resilient Performance Delivery through Emphatic and Agile Governance; (3) Institutional Growth through Unique Niche and Specialisation for Long-term Sustainability; (4) Transformative Life Experiences through Knowledge Empowerment and Trust; and (5) Global Eminence as Malaysian Top Research University in 2025.

Campus Sustainability Steering Committee

The following illustrates how sustainability is managed at the university level:



Chronology

The timeline below illustrates a chronology of events outlining key functions of UTM Campus Sustainability (UTM CS) for the past 10 years:

2010

Voluntary initiatives on recycling

Set up Campus Sustainability Policy (v1)

2011-2013

Sustainability Campus Unit, reporting to Office of Asset and Development

Living Labs launched:

- Living Lab 1: Sustainable Arcade
- Living Lab 2: Green Office
- Living Lab 3: Sustainable Energy Management

2013-2014

Office of Campus Sustainability as a cost centre on its own, reporting to Office of Deputy Vice Chancellor (Development)

Campus Sustainability Council (*Majlis Pelestarian Kampus*) launched

Living Labs launched:

- Living Lab 4: Bio-recycling centre
- Living Lab 5: Green School
- Living Lab 6: Green community

2015-2016

UTM Campus Sustainability, reporting to Office of Deputy Vice Chancellor (Development)

Focuses on:

- Sustainable Finance
- Volunteerism
- Showcase Projects
- Initiatives across campus
- Community Outreach

2017-2018

UTM Campus Sustainability, reporting to Office of Asset and Development

Focuses on:

- Incorporate SDGs initiatives
- High Impact Research
- UTM Greenleaf assessment
- Sustainability Endowment Fund

Living Labs launched:

- Living Lab 7: Sustainable Transport
- Living Lab 8: Campus Biodiversity

2019-2020

UTM Campus Sustainability, reporting directly to the Vice Chancellor

Set up Campus Sustainability Policy (v2)

Focuses on:

- Restructuring the governance and secretariat works
- Sustainability Governance Framework 2030
- Redefining the action-plan of UTM's Sustainability related to The World in 2050 (TWI 2050

Source: Slides from UTM Campus Sustainability – Modul 4, Sijil Eksekutif Pendidikan Tinggi, 28 September 2020

UTM Campus Sustainability Policy

Universiti Teknologi Malaysia (UTM) aspires to be a model for sustainable community, following its own capabilities by:

i. Aligning the University strategic plan with SDGs implementation, through the development of SDG models to meet local needs;

i. Adopting sustainable building and infrastructure design through a clear sustainable development framework to achieve cost effectiveness;

i. Optimizing University asset management and sustainable business opportunities to achieve more efficient costs;

i. Managing talent towards improving skills and competencies to support the implementation of the SDGs;

i. Managing finances sustainably and provide financial a/location planning for the smooth implementation of the policies;

i. Using electricity, water, air conditioning, office resources and other public facilities sustainably;

i. Minimizing waste generation and pollution through effective waste management;

i. Eliminating non-biodegradable packaging of food and beverages through the No Single-Use Plastics Campus Initiative;

ix. Maximizing the reuse of organic solid waste through the Waste-to-Wealth and Fork-to-Farm programmes;

ix. Conserving water bodies/resources, enrich biodiversity and promote nature protection and control activities;

ix. Maintaining a balance of developed areas and green areas to achieve a sustainable campus ecosystem;

ix. Cultivating low carbon practices among the campus community through the planning of a Decarbonized Campus Map;

ix. Strengthening the on-campus public transport system to reduce the use of motor vehicles;

ix. Promoting community spirit, quality of life improvement and responsiveness to local and global contexts in support of sustainability aspirations;

ix. Inculcating integrity and ethical values through volunteer activities and ongoing involvement with all walks of life; and

ix. Cultivating a healthy lifestyle and cultivate spiritual well-being in a safe and conducive environment.

Note: This policy is translated from its Bahasa Malaysia version (16 August 2020). Should there be any discrepancies, the Bahasa Malaysia version takes precedent.

Localisation of SDGs at UTM

Through UTM Campus Sustainability, the indicators under each Goal were localised based on UTM needs. A summary of the localisation is as follows:

x

Total indicators at the global level

y

Total indicators that are localised at UTM level

z

Percentage localisation in UTM

14
7
50%

13
4
30.8%

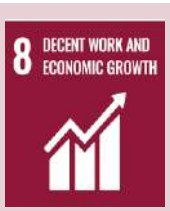
27
6
22.2%

11
8
72.7%

14
9
64.3%

11
10
90.9%

6
7
116.7%



17
10
58.8%

12
5
41.7%

11
3
27.3%

15
13
86.7%

13
9
69.2%

8
4
50%

10
5
50%

14
8
57.1%

23
10
43.5%

25
7
28.0%

*pending approval by university

Sample:

11 Total indicators at the global level

8 Total indicators that are localised at UTM level

72.7% Percentage localisation in UTM

Localised indicators	
4.2.2	a) Number of graduates who gained primary school teaching qualifications b) Number of graduates who gained a qualification that entitled them to teach at primary school level c) Proportion of first degree students (Number of students starting first degree d) Number of first generations student starting a first degree)
4.3.1	a) Have a policy that ensures that access to these activities is accessible to all, regardless of ethnicity, religion, disability or gender b) Number of educational resources for those not studying at the university c) Number of educational outreach activities beyond campus
4.4.1	a) Proportion of students with information and communications technology (ICT) skills ; b) Number of executive education programmes and/or vocational training conducted by University
4.5.1	Number of public lectures and/or community educational events hosted by University
4.7.1	Extent to which (i) global citizenship education and (ii) education for sustainable development are included in a) education policies b) Curricula c) Syllabus; and d) Student assessment
4.a.1	Percentage of schools/faculties within UTM that have access to a) The Internet for educational purposes, b) Computer for educational purposes, c) Disability-adapted infrastructure, d) Basic drinking water, and e) Single-sex basic sanitation facilities.
4.b.1	Volume of official development assistance flows for scholarships by sector and type of study
4.c.1	Proportion of academic staff who have received at least the minimum organized training (e.g. pedagogical training) pre-service or in-service required for teaching

Summary

Recap (see Reporting Framework, 1.5)

ORGANISING PRINCIPLE

STEP 4:
Integrate, implement and embed the SDGs

How might UTM envision an appropriate concept / framework that enables the campus community to view sustainability as a way of life, rather than a check-list / reporting exercise?

Based on the input presented in this section, the figure below paints a picture on the most feasible framework for implementation within the UTM context :

UTM Campus Sustainability Governance Framework 2030

4

Executing sustainability

1 GOVERNANCE

Develops policy / guidelines. Determines and approves / endorses allocation of funds and resources.

Offices involved

The four main portfolios of the Deputy Vice Chancellors, that is,

- Academic and International,
- Research and Innovation,
- Student Affairs, and
- Development

are directly involved in the sustainability agenda of the university.

It is difficult to assess which portfolio has a greater share of the contribution, as each contributes to sustainability in its own way:

- Academic and International – Education for sustainable development
- Research and Innovation – Research and development, commercialisation, innovation (RDCI) related to sustainability
- Student Affairs – student development activities tuned to local, national, and global development agenda
- Development – physical and virtual infrastructure to enable the other three portfolios to function well

There are specific entities under each portfolio of the Deputy Vice Chancellors which will be consulted for governance-related decisions on the university's sustainability agenda:

Academic and International

Schools and agencies under the seven faculties:

- Faculty of Engineering
- Faculty of Built Environment and Surveying
- Faculty of Social Science and Humanities
- Faculty of Science
- Razak Faculty of Technology & Informatics
- Malaysia-Japan International Institute of Technology
- Azman Hashim International Business School

Research and Innovation

Research Alliances:

- Frontier Material
- Resource Sustainability
- Health and Wellness
- Innovative Engineering
- Smart Digital Community

Community and industry engagement – Centre for Community and Industrial Networking (CCIN)

Student Affairs

- Divisions responsible for management of student societies and organisations
- Office bearers of student societies and organisations

Development

- Physical infrastructure – Facilities Management, Office of Asset and Development
- Digital infrastructure – UTM Digital
- Talent management – Department of Registrar

Image: Supandi Bunagin

Leadership commitment to sustainability

UTM is committed towards sustainability. As illustrated throughout Section 3 of this report (refer 3-12 to 3-13, as well as 3-18 to 3-22), sustainability is an integral component of the university's strategic plan.

In this picture: a total of 56 staff from the Office of Asset and Development worked together to plant *Pennisetum purpureum*, or Napier Dwarf grass at the Deer Park in UTM Johor Bahru on 12 February 2020. The population of 30 deer at the park require 100-150 kg of this grass as their daily feed, which has 13% more protein content than normal grass.

Project leader: Mohd Afizan Alang, Landscape Unit, Office of Assets & Development

Physical campus development

The Office of Deputy Vice Chancellor (Development) oversees planning and development of masterplans for physical infrastructure of UTM.

UTM Johor Bahru sits on over 1,300 hectares of land, with over 52.6 percent green belt, 21.8 percent water catchment area (except *forests* and greeneries), and 23.4 percent areas with ground covers (including secondary forests).

As such, it identifies itself as a green campus. Over the years, nature trails were established for sports and recreational purposes not only for the campus community, but also for communities around the university.

There is an orchard called the UTM Orchard. This orchard is where poultry and fruit trees are cultivated on campus. The orchard also serves as a living lab where students and researchers conduct experiments on solid waste management. They also produced organic fertilizers for sale, and educate communities on how to make their own fertilizers.

UTM Johor Bahru also has 19 km of river trail on campus. This river trail is included as part of a national-level initiative called the National River Trail under the Ministry of Environment and Water, where over 10,000 km of river trails are earmarked for conservation.

The university management monetises available assets on campus in order to generate additional income to sustain campus operations and maintenance. This is achieved through land and property leasing, utilising building spaces, accommodation leasing, and sports facility rental.

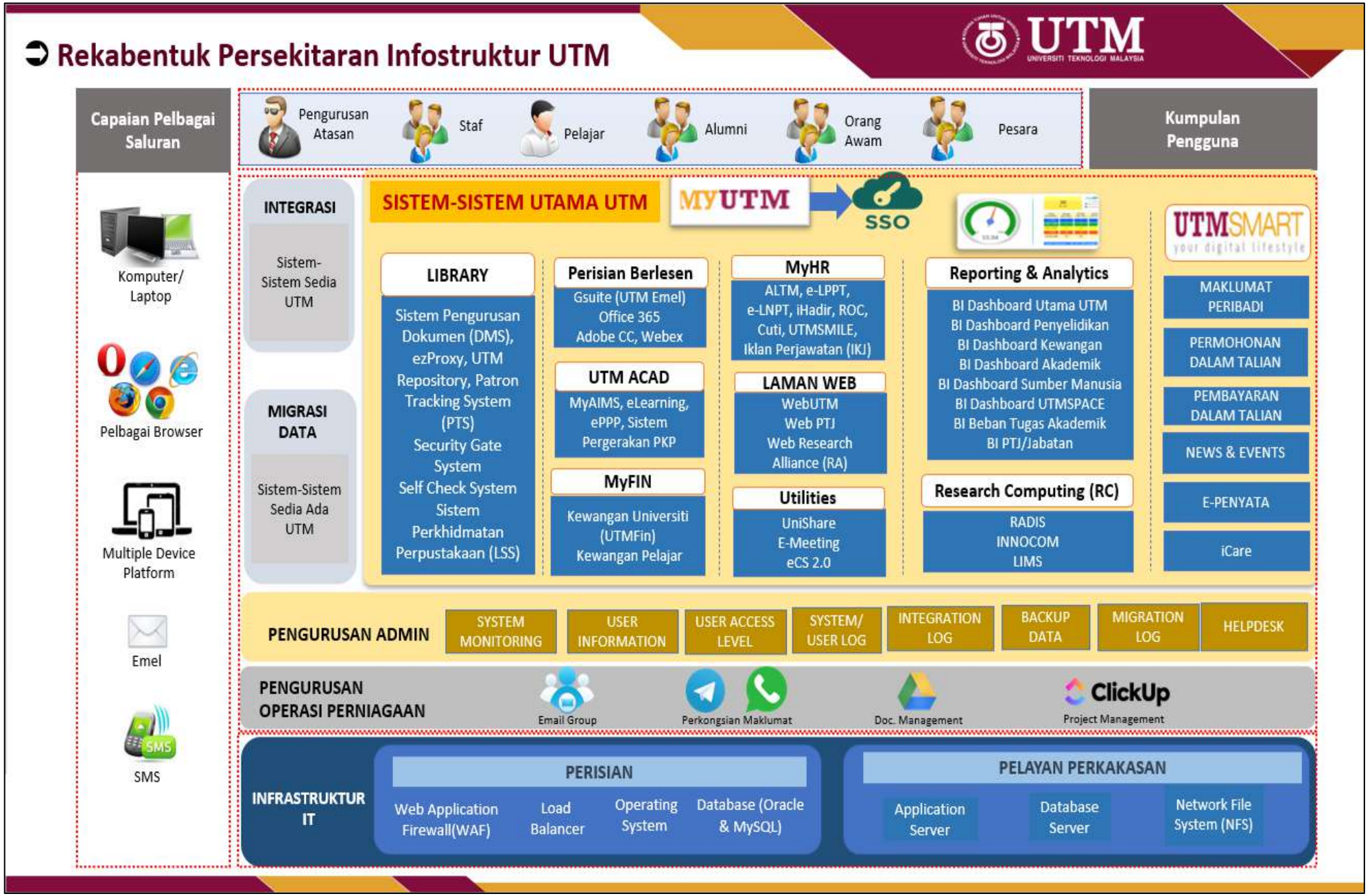
In recent years, the university carries out renovation initiatives to make the campus compound disabled-accessible. It also upgrades facilities of buildings within the inner core of the campus, which are over 35 years old.

These upgrades include upgrading of toilets, widening of roads, and building more pedestrian walkways to encourage the community to walk more often around the campus.

UTM also replaces old water pipes and install smart metering system, which could cut water usage by 20 – 30%.

At the UTM Kuala Lumpur campus, an outdoor carpark is installed with rooftop solar (1 MW), with an average daily energy production of 3,440 kWh.

Note: These initiatives are implemented by the Office of Asset and Development, which will be briefly reviewed under the "Service provider" subsection later.



Digital campus development

In this picture: the overall infostructure of UTM (in Bahasa Malaysia).

UTM aims to be a digital campus. Over the past 10 years, many manual processes are migrated online, with systems that are developed in-house.

Note: These initiatives are implemented by UTM Digital, which will be briefly reviewed under the "Service provider" subsection later.

Image: UTM Digital

Talent development

The Department of Registrar oversees human resource management of the university. It works in tandem with other divisions, in terms of:

Digitalisation of work process
Partner: UTM Digital
Role
- Convert over-the-counter manual processes into digital formats under the MyHR system
- Produce Power BI (Business Intelligent) dashboards for effective reporting and monitoring
- Enhance service delivery for rapid deployment in times of crisis, such as staff health declaration through UTM Smart application

Maintain safety and security of UTM community on campus
Partner: Security Division and Office of Safety, Health and Environment (OSHE),
Role
- Organise awareness programmes / campaign
- Conduct internal audit of working spaces and building blocks

Promoting healthy and happy working environment
Partner: Faculties and entities across UTM and Talent Transformation Centre (TTC)
Role:
- Establish UTM Staff Well-Being Framework
- Flexible working arrangement for mothers
- Establish Diversity and Inclusivity Policy for UTM staff
- Organise sports and recreational activities

Enhance staff competency
Partner: Faculties and entities across UTM and UTM Academic Leadership (UTM LEAD)
Role:
- Implement Competency Based Talent Management (CBTM) to enhance professional development for non-academic staff
- Mandate compulsory education and training programmes for new academic staff
- Organise activities to inculcate UTM core values among staff
- Offer short-term attachment opportunities with organisations within and outside the country

In recent years, the Department of Registrar is tracing healthcare expenditure of UTM staff to reduce expenditure spent on inpatient treatment, hospitals and healthcare facilities.

UTM aspires to identify appropriate intervention measures to support health needs of its staff, in order to reduce the annual healthcare expenditure of the university.

Working on the paddles

There is a thriving cycling population on the UTM campus. The UTM management team, typically led by the Vice Chancellor or the Registrar, would often allocate time to cycle around the campus in the afternoon, together with UTM staff and students.

The university plans to build bicycle-friendly pathways, so that more members of the university community would take up cycling as an alternative transport mode on campus.

Image: UTM Office of Corporate Affairs

2 CONCEPTUALISATION

Provides strategic direction based on available funds and resources

Sustainability begins with me

An introduction to UTM Campus Sustainability, together with the UTM Campus Sustainability Policy is reviewed in Section 3 of this report.

In this picture: “Bring Your Own Mug / Cup” programme, jointly organised between UTM Campus Sustainability and UTM Holdings Sdn. Bhd , UTM Endowment, and Deen Corner, Arked Meranti on 26 July 2020. During this event, UTM staff were encouraged to bring their own mugs in order to claim free beverages from participating vendors.

Image: UTM Office of Corporate Affairs

A zero single-use plastic campus

UTM is committed in eradicating the use of single-use plastic on campus. During its university-level Eid celebration in 2019, no single-use plastic were used throughout the event.

Image: UTM archives, 10 July 2019

RABU • 10.07.2019

JOHOR

WAHID OMAR (lima dari kanan) bersama kakitangan UTM komited dalam meneruskan agenda kelestarian dan mendukung inisiatif SDG selepas pengisytiharan Kampus Tanpa Plastik Sekali-Guna di Johor Bahru, baru-baruini.

UTM praktikkan 3P, sasar sifar plastik

Inisiatif SDG didik kakitangan, pelajar UTM mesra alam sekitar

Fokus

Isytihar kampus tanpa plastik

Oleh ZULHISHAM ISAHAK
pengarang@utusan.com.my

JOHOR BAHRU 9 JULAI

JOHOR BAHRU 9 Julai - Universiti Teknologi Malaysia (UTM) mempraktikkan Polisi, Pelaksanaan dan Pemantauan (3P) iaitu budaya tanpa plastik bagi memastikan kelestarian alam sekitar sekali gus menyasarkan penggunaan sifar plastik.

Pihak UTM menggantikan dan memperkenalkan bahan alternatif plastik iaitu penggunaan bahan mesra alam dan *waste-to-wealth* dalam kampus mereka.

Naib Canselor UTM, Prof. Datuk Ir. Dr. Wahid Omar berkata, bagi memastikan inisiatif itu berjaya, pihak UTM dan J-Biotech bekerjasama sejak 2018 untuk inisiatif kampus tanpa plastik sekali guna dan alternatif plastik mesra alam.

"Melalui kerjasama ini J-Biotech menyokong inisiatif Matlamat Pembangunan Lestari (SDG) UTM dan akan membantu memberi khidmat nasihat, informasi dan kesedaran menerusi pameran dan penerangan kepada semua pengusaha, staf serta pelajar yang terlibat dalam pengurusan program rasmi universiti tentang kepentingan penggunaan barangan mesra alam dan sifar plastik sekali guna ini.

"Kerjasama ini juga diharapkan akan dapat membantu mencapai matlamat sifar sampah iaitu pengurangan kos mengurus sampah sehingga 60 peratus dan mencapai aspirasi matlamat SDG ke-12 iaitu Kebertanggungjawaban Pengeluaran dan Penggunaan," katanya ketika ditemui di sini.

Setakat ini, katanya, pihak UTM membelanjakan sekitar RM60,000 sehingga RM70,000 sebulan dalam pengurusan sisa pepejal dengan purata sekitar 30 sehingga 40 peratus sisa sampah terdiri daripada plastik yang tidak boleh dikitar semula.

WAHID OMAR (tengah) diberikan penerangan berkenaan bahan alternatif plastik yang mesra alam sekitar.

SISA makanan diasingkan dan pihak UTM memperkenalkan bahan alternatif plastik iaitu penggunaan bahan mesra alam dan waste-to-wealth dalam kampus.

"Oleh itu UTM sebagai sebuah universiti awam mengambil peranan besar untuk membantu negara dalam menyokong gagasan SGD dengan mendidik masyarakat terutamanya dalam menganalkan gaya hidup lestari.

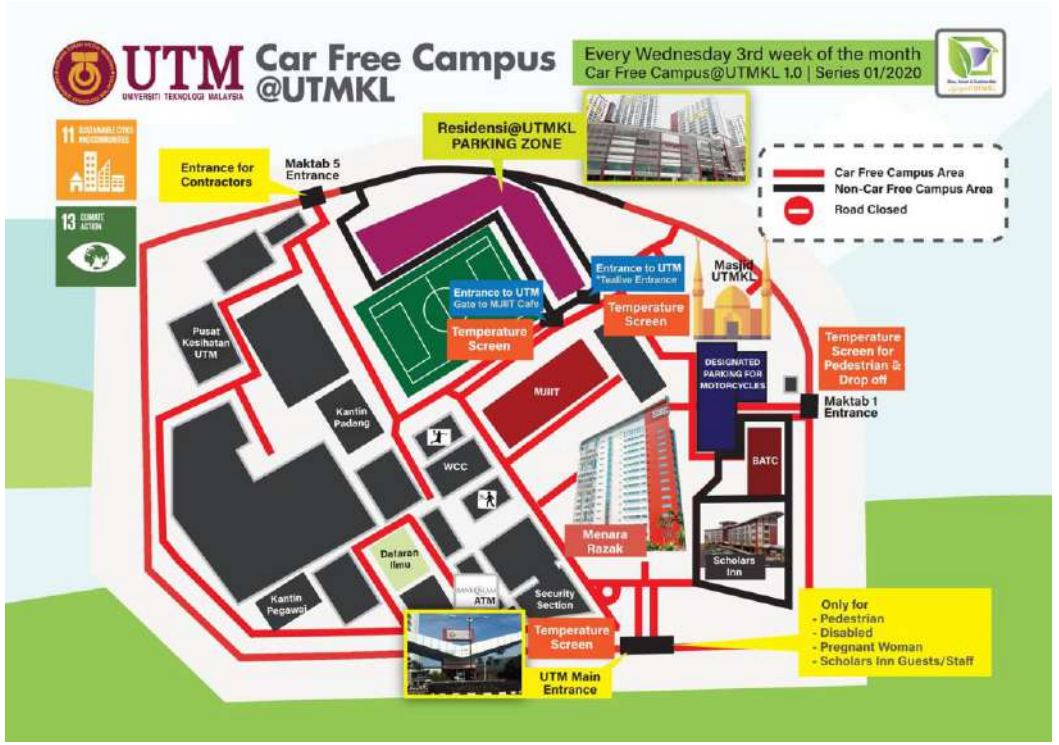
"Di samping itu UTM menitikberatkan SDG untuk kelestarian kerana juga selaras dengan satu nilai tunjang yang mendasarkan pentadbiran universiti," katanya ketika ditemui selepas pelancaran program berkenaan.

Selaras dengan inisiatif tersebut katanya, pelancaran program itu adalah merupakan inisiatif berterusan universiti untuk mengaplikasikannya pelan Kampus Rendah Karbon, Kampus Sifar Sampah dan Kampus Pengurusan Sampah Efektif.

Menerusi agenda sifar sampah pula, beliau berkata, pihak pengurusan menyasarkan penurunan sisa plastik domestik dalam kampus akan berkurangan menjelang tahun 2022 dan semua sisa organik akan dikitar semula dalam kampus bagi menghasilkan bahan guna-semula baja, produk hiliran untuk ternakan dan penghasilan tenaga boleh diperbaharui iaitu biojisim.

Katanya, hasil kajian yang dilakukan, menunjukkan secara purata pengurusan sisa domestik UTM menyumbang sebanyak 0.12 metrik tan CO_2 per kapita setahun iaitu dua peratus daripada keseluruhan pelepasan gas karbon.

Menurutnya, memandangkan jumlah sisa bukan kitar semula yang semakin meningkat di UTM, satu inisiatif dikenali sebagai sifar sampah dimulakan pada 2018 bermatlamatkan komitmen universiti untuk mengurangkan jejak karbon sehingga 40 peratus menjelang 2020.



A car-free campus

Throughout the years (before the COVID-19 lockdown), the university allocates one Thursday every month for UTM Car Free Campus.

On this day, specific zones of the campus are cordoned off from motorised vehicles. Staff are required to park at designated parking zones, and commute to their offices on foot or through buggies at specific locations.

Image: UTM Campus Sustainability

Student empowerment for change

There are more than 27,000 individuals who are registered as students with UTM. Each student – full time, part time, offshore, short-term – brings a wealth of experience to the campus.

For these students, admission to UTM is a life-changing experience not only for them, but also for their families.

As such, it is necessary for the university to equip its students with the required skills and competencies that would help them address real world challenges after graduation.

The operational term used within the UTM context is "holistic student development". This responsibility is jointly shared by the Office of Deputy Vice Chancellor (Student Affairs), together with all faculties, residential colleges, and related UTM entities.

At UTM, each student must drive his/her own development. Even during the COVID-19 lockdown, students are still carrying out activities online, and from a distance.

The following table illustrates the number of activities organized by students for the past five years:

Year	Total activities	Total students participating
2016	799	12,460
2017	759	9,448
2018	534	12,150
2019	888	20,706
2020	864**	16,226**

** until Q3 2020

The Office of Deputy Vice Chancellor (Student Affairs) organises an annual bidding event called the UTM Top Bidder. In this event, students submit event proposals to bid for funding from the office. Each proposal will be evaluated by a panel of judges, who are appointed from different offices in UTM.

The office ensures that all proposed activities must fulfil at least three leadership elements: leadership and teamworking skill, problem solving, adaptability, enterprising skill, communication skill and students' self-esteem and confidence.

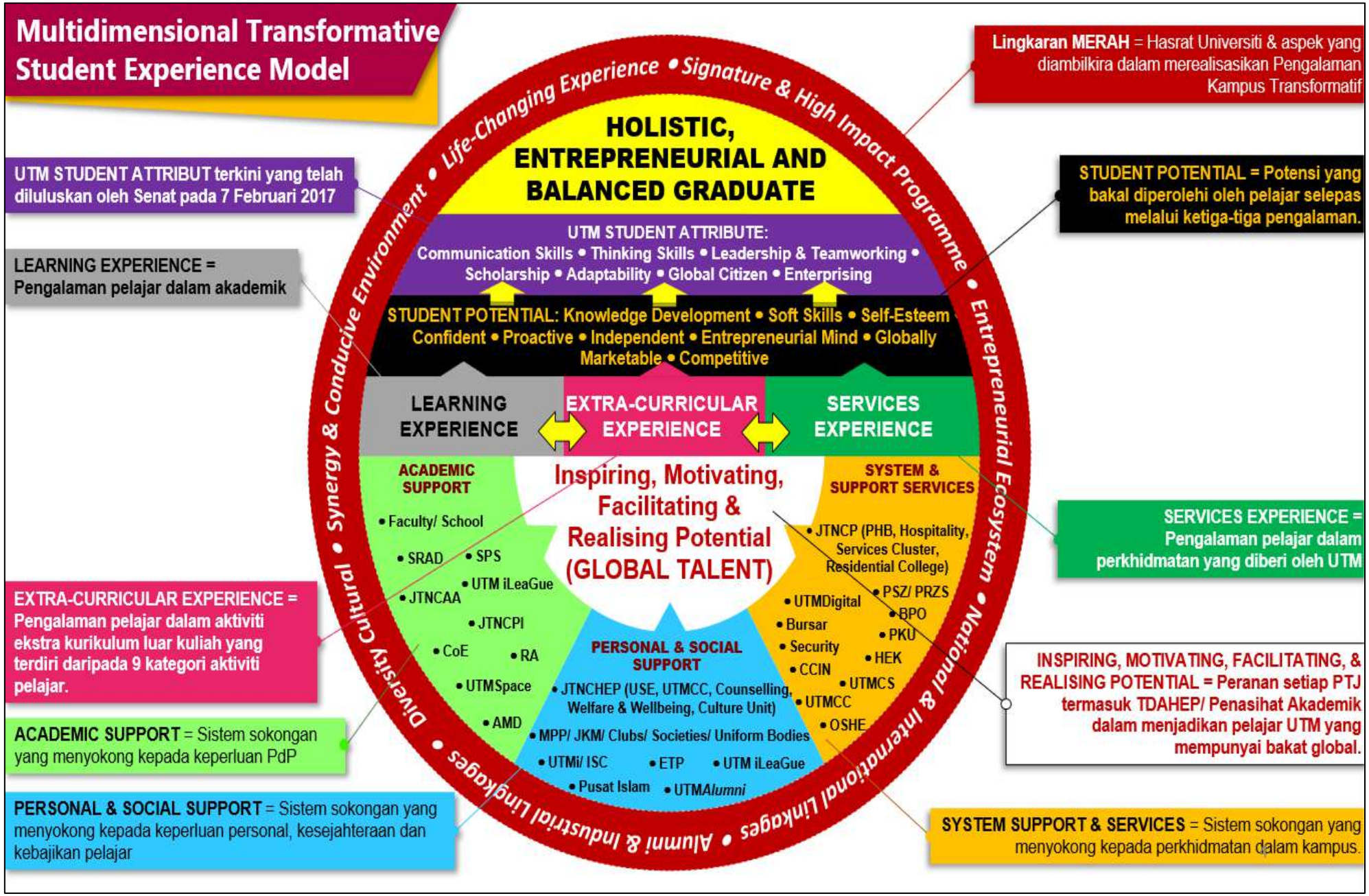
There is also a specialised elite programme called the 5 Excellent Track (5ETP) programme, where exceptional talents are groomed throughout their undergraduate studies based on five tracks: Leadership, Nobel Academics, Entrepreneurship, Sports and *Tahfiz* (for Muslims who aspire to memorise the Quran in its entirety).

Since 2011, the programme yields graduates who are awarded highest accolades during the annual convocation ceremony.

Holistic student development

In this picture: an overview of faculties, offices, and support structure that enables student development to flourish in UTM (some terms are presented in Bahasa Malaysia).

Image: Office of Deputy Vice Chancellor (Student Affairs)



A UTM success story

Syafik made the university proud by being awarded the national level recipient of National Student Figure Award (*Anugerah Tokoh Siswa Kebangsaan*) for 2018. He was an exemplary student who excelled in both his studies, as well as in extra-curricular activities.

Image: UTM archives, 19 May 2019

Tokoh Siswa Kebangsaan 2018 kelahiran UTM

Muhamad Syafik harum nama universiti, rangkul anugerah prestij

Johor Bharu

Mahasiswa jurusan Sains Komputer (Rangkaian & Keselamatan Komputer) dari Universiti Teknologi Malaysia (UTM).

Muhamad Syafik Rahmat mengharumkan nama UTM apabila berjaya merangkul Anugerah Menteri Pendidikan yang membawa gelaran Tokoh Siswa Kebangsaan pada Majlis Anugerah Tokoh Siswa 2018 (ATS).

Bekas pelajar dari Maktab Sultan Abu Bakar atau lebih dikenali sebagai English College di Johor Bharu itu berkata, beliau tidak menyangka mendapat anugerah itu kerana penyertaan begitu ramai dengan pencapaian hebat oleh mahasiswa dari perwakilan semua universiti.

"Saya menyertai program Diploma Sains Komputer (Teknologi Maklumat) UTM pada 2013. Kemudian, saya mengorak langkah satu persatu dengan melaksanakan tanggungjawab sebagai mahasiswa dan perwakilan pelajar. Saya tidak menaruh harapan tinggi untuk memenangi anugerah itu," katanya.

Kejayaan Muhamad Syafik itu menjadikan UTM mencipta sejarahnya buat kali pertama, memenangi anugerah tahunan berprestij anjuran Kementerian Pengajian Tinggi yang diadakan sejak 2013.

Duta institusi

Anugerah ini memberi pengiktirafan kepada mahasiswa yang memiliki daya kepemimpinan dan ilmu tinggi.

Antara kriteria bagi penerima anugerah ini adalah menyerlah dalam kepemimpinan dalam perlaksanaan program universiti dan masyarakat setempat, mewakili universiti dalam bidang sukan dan membabitkan diri dalam kerja kemasyarakatan yang memberi manfaat kepada masyarakat mahupun universiti.

Kriteria lain, kepetahan berbicara, yakin mengutarakan hujah dan pandangan seiring ilmu serta pengetahuan dimiliki.

Penerima anugerah ini juga duta yang mewakili sesebuah institusi pengajian kepada masyarakat di dalam mahupun luar negara.

"Ketika dalam pembelajaran, cabaran utama saya perlu tangani adalah menguruskan diri sendiri terlebih dahulu. Saya perlu bijak mengatasi masalah membabitkan emosi dengan sebaiknya. Kekangan masa juga perlu bijak ditangani dan saya atasinya dengan mendisiplinkan diri untuk mengikut jangka masa yan tersedia.

"Tugasan sebagai mahasiswa dan ketua perwakilan pelajar memerlukan pelbagai pengorbanan, termasuk masa, kewangan, kepakaran dan tenaga.

"Untuk membahagikan masa di antara waktu belajar dan komitmen lain, saya lazimnya menggunakan pelajaran pada lewat malam. Menjaga kesihatan turut menjadi keutamaan yang mana waktu untuk berehat perlu ada dan mencukupi," katanya.

UTM jadi pilihan

Muhamad Syafik berkata, pelajar yang memilih pengajian pada peringkat diploma perlu ada pengetahuan dan pendedahan dari awal agar tidak ketinggalan dalam perubahan informasi serta mampu seiring perubahan teknologi, khususnya dalam teknologi maklumat.

Katanya, teknologi maklumat pantas membangun dan berubah, sekali gus perlu memiliki daya saing dan disiplin tinggi.

Muhammad Syafik berkata, sejak remaja, UTM menjadi pilihannya untuk melanjutkan pengajian kerana mendapat pendedahan mengenai universiti berkenaan daripada guru, rakan sebaya dan saudara-mara. Justeru, bercita-cita menjadi mahasiswa di universiti awam berkenan.

Tambahan, ada guru dan saudara-mara yang menjadi alumni UTM menyatakan universiti itu adalah universiti kejuruteraan dan teknikal terbaik di Malaysia dan antara terbaik di Asia.

"UTM mempunyai kelengkapan terkini yang banyak membantu dalam proses pembelajaran mahasiswa. Saya sebagai anak jati Johor melihat UTM sebagai universiti terulung, khususnya di Johor dengan penawaran program pelbagai dan menarik," katanya.

Mengenai minatnya dalam bidang sains komputer, beliau berkata, ia sudah lama diminati kerana bidang itu pemangkin dan tulang belakang bagi proses tadbir urus dalam apa jua perniagaan yang wujud.

"Bidang sains komputer menarik dan sentiasa selangkah lebih kehadapan *ahead of time*, berbanding bidang lain dari segi teknologi. Malah, ia bidang yang sentiasa berubah dari segi teknologinya dalam tempoh jangka masa enam sehingga 12 bulan.

"Bidang ini juga tidak dapat dijangka apakah yang akan berlaku untuk seterusnya, namun pelajar diajar ilmu asas yang kukuh agar mampu diadaptasikan pada bila-bila masa dan apa jua situasi. Ilmu dipelajari pada peringkat diploma, benar-benar membantu dalam persediaan pembelajaran ketika peringkat sarjana muda. Ia memberi banyak impak dalam pengukuhan pengetahuan dalam bidang itu," katanya.

Taraf kelas dunia

Muhammad Syafik berpendapat, kelengkapan dan penyediaan fasiliti penting dalam proses pembelajaran, tidak kira pada peringkat apa jua sekalipun.

Katanya, UTM berjaya dengan matlamatnya menjadikan pembelajaran begitu menarik dan sempurna. Penyediaan kelengkapan bertaraf kelas dunia dan kondusif memberikan impak tinggi dalam proses pembelajaran serta memberikan pengalaman pembelajaran menarik untuk semua.

"Dengan penyediaan jalur lebar yang meluas dan makmal sains dan komputer canggih ia memberi kepuasan kepada setiap mahasiswa untuk terus menjalani pembelajaran yang selesa dan sempurna.

"Begitu juga dengan kualiti pensyarah UTM, mereka 'Superb' dan komited dalam tugasan dan berpengetahuan tinggi dalam bidang mereka. Pengalaman dimiliki pensyarah mampu memberikan input tinggi kepada penuntut dan membuatkan sesi kuliah menarik. Malah, ada pensyarah UTM menjadi 'role model' atau sumber rujukan bagi pensyarah luar, samada di dalam mahupun luar negara," katanya.

***Muhamad Syafik bersama ibu bapa** selepas menerima gelaran Tokoh Siswa Kebangsaan yang disampaikan oleh Menteri Pendidikan, Dr Maszlee Malik pada Majlis Anugerah Tokoh Siswa 2018.*

Getting students to be life-ready

Beyond the skills and competencies highlighted in 4.17, the students need opportunities – a platform, mentorship, seed funding – to experiment and bring their ideas into reality.

Towards this aim, UTM establishes iLeaGue, or the Institute for Life-Ready Graduate, which hosts the following centres:

- Centre for Academic and Experiential Learning (CAEL), and
- Centre for Student Innovation & Technology (XCITE).

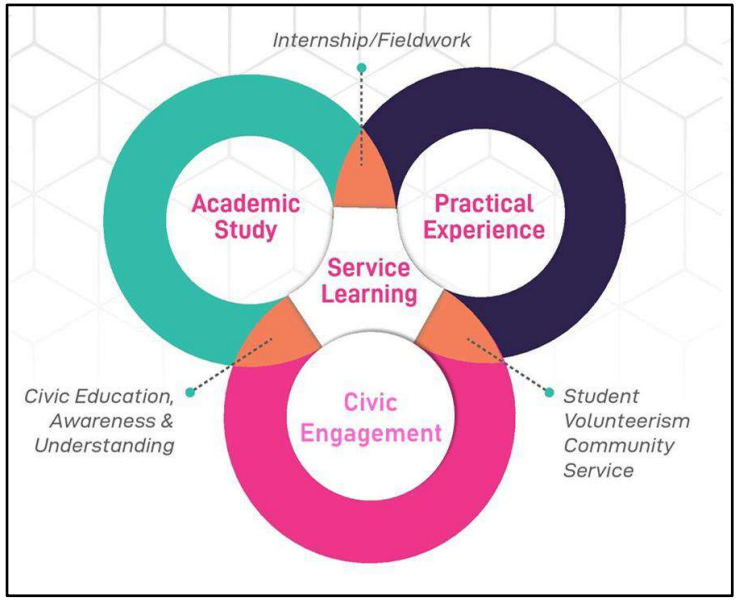
Service learning

CAEL provides a structured process for academics and students to conduct service learning and experiential learning activities with communities outside UTM.

In April 2019, the Ministry of Higher Education adopted SULAM (Service Learning Malaysia – University for Society) project as a national-level initiative.

The groundwork for SULAM was cultivated since 2011 at Tanjung Surat, Johor Bahru by UTM staff and students through compulsory credited course related to service learning.

The framework for SULAM implementation is as follows:



A grant amounting to RM 263,000 was granted by the Southeast Johor Development Authority (KEJORA) to conduct activities with local communities.

The table below illustrates the number of activities organised by students at Tanjung Surat since 2017:

Year	Total activities	Total students participating
2017	2	50
2018	5	165
2019	12	287
2020	5	203

Penuntut sumbang khidmat dan kemahiran

Program Sulam bangun komuniti PTS

Oleh ZULHISHAM ISAHAK
utusan.johor@gmail.com

■ KOTA TINGGI 30 APRIL

Fokus

UNIVERSITI Teknologi Malaysia (UTM) melalui kepakaran penyelidikan dan semangat universiti untuk masyarakat menterjemahkan Service Learning Malaysia-University For Society (Sulam) dengan melaksanakan projek Pembangunan Komuniti, Eko Warisan Pelancongan di Pulau Tanjung Surat (PTS), di sini baru-baru ini.

Sulam merupakan kaedah menggabungkan objektif pembelajaran dengan khidmat komuniti bertujuan memberi pengalaman pembelajaran yang menghubung kaitkan teori dan praktis dengan menyelesaikan permasalahan sebenar dalam komuniti serta berteraskan cinta, kegembiraan dan saling menghormati.

Objektif Sulam yang merupakan sebuah inisiatif Kementerian Pendidikan adalah memboleh-kan mahasiswa menyumbang kepada komuniti umum melalui pengetahuan dan kemahiran yang dipelajari di bilik kuliah atau makmal diaplikasikan bagi membantu menyelesaikan masalah setempat.

Menurut Menteri Pendidikan, Dr. Maszlee Malik yang merasmikan program tersebut, Sulam diperkenalkan bagi meningkatkan kualiti pembelajaran untuk menghasilkan graduan yang holistik dan seimbang serta membantu komuniti menyelesaikan masalah setempat.

"UTM mempunyai kepakaran yang pelbagai daripada sudut teknologi dan saya difahamkan seramai lebih 200 mahasiswa daripada pelbagai disiplin berkongsi kemahiran mereka dengan penduduk kampung dan komuniti di sini sejak November 2017 yang membawa tema ekowarisan pelancongan.

MASZLEE MALIK, kakitangan UTM dan penduduk setempat menunjukkan produk cendawan yang dihasilkan menerusi program Sulam.

"Saya yakin selepas pelancaran program ini, PTS akan mula dikenali di peringkat negeri dan akhirnya tercatat dalam peta dunia sebagai sebuah pulau ekowarisan pelancongan di negeri Johor yang amat disayangi," katanya kepada pemberita selepas perasmian projek itu.

Sementara itu, Naib Canselor UTM, Prof. Datuk Ir. Dr. Wahid Omar berkata, pemilihan PTS sebagai lokasi adalah kerana keunikan pulau tersebut yang kaya dengan sejarah dan warisan yang telah dilupakan.

"Ini merupakan sebuah pulau dikelilingi ekosistem hutan bakau yang menarik dan boleh dijadikan kawasan pelancongan desa serta tempat berpusatnya sukan layar jong, sebuah permainan perahu layar kecil bagi orang Melayu di kawasan Kepulauan Riau pada tahun 40-an namun semakin dilupai kini.

"Di pulau ini juga terdapat beberapa orang pakar membuat dan bermain jong yang telah mewakili negara dalam pertandingan jong di Singapura dan Indonesia," katanya.

Tambah beliau, pulau ini secara keseluruhannya memberi peluang bagi pensyarah dan pelajar IPT untuk meneroka, menyelidik dan membuat pelbagai kajian.

Projek itu merupakan anjuran beberapa pusat dan fakulti di UTM bersama-sama Majlis Pengurusan Komuniti Kampung (MPKK) Tanjung Surat dengan bantuan Lembaga Kemajuan Johor Tenggara (Kejora), Pihak Berkuasa Tempatan Pengerang, Yayasan Warisan Johor dan Persatuan Sejarah Johor.

SERVICE LEARNING MALAYSIA
SULAM
UNIVERSITY FOR SOCIETY

In this page:

Left – SULAM logo

Top left, right – newspaper coverage on initiatives undertaken by UTM and its partner, the Southeast Johor Development Authority (KEJORA) in transforming Tanjung Surat into a vibrant ecotourism spot for the Johor state government.

Image: UTM iLeaGue

PULAU Tanjung Surat yang kaya dengan hutan paya bakau mampu menjadi tarikan pelancong.

DESTINASI

UTM bantu ekopelancongan Pulau Tanjung Surat

Oleh ABD. AZIZ ITAR
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UNIVERSITI Teknologi Malaysia (UTM) telah mengenal pasti banyak tarikan alam sekitar dan kesan peninggalan sejarah di Pulau Tanjung Surat, Kota Tinggi, Johor, yang belum dikomersialkan. Pulau yang pernah menjadi pintu masuk di wilayah Johor timur pada kurun ke-19 itu sukar berkembang pesat jika tiada usaha dibuat bagi memajukan ekopelancongan di pulau tersebut.

Oleh itu, UTM telah mengambil inisiatif melalui program-program tanggungjawab sosial korporat (CSR) yang dijalankannya, sekali gus diharap mampu memberi manfaat kepada para penduduk di pulau itu.

Menurut pensyarah Fakulti Alam Bina dan Ukur UTM, Dr. Hisyam Rasidi, antara yang dikenal pasti adalah hutan paya bakau di Pulau Tanjung Surat yang kaya dengan pelbagai jenis flora dan fauna.

DR. HISYAM RASIDI

"Terdapat banyak hutan paya bakau di sekeliling pulau ini dengan pelbagai spesies kayu bakau yang amat tinggi nilai dan kegunaannya, dan boleh diteroka oleh para pengunjung dengan menggunakan bot.

"Juga terdapat pelbagai jenis hidupan liar termasuk burung dan hidupan marin yang boleh dijadikan tarikan buat para pelancong asing termasuk dari Singapura yang mudah untuk datang ke sini.

"Antara usaha yang dilakukan UTM ialah memulihara ekosistem alam sekitar selain membantu melatih penduduk di sini sebagai pemandu pelancong dalam bidang ekopelancongan," katanya kepada *Mingguan Malaysia*.

Pulau Tanjung Surat yang mempunyai tiga buah kampung iaitu Kampung Linting, Kampung Tanjung Surat dan Kampung Nyior juga kaya dengan kesan-kesan sejarah peninggalan penjajah British. Pulau yang kini didiami kira-kira 200 keluarga itu antaranya pernah dijadikan pelabuhan kecil di bawah pentadbiran Datuk Penggawa Timur ketika era pemerintahan Sultan Abu Bakar.

DR. SALLEH MOHD. NOR (dua dari kanan) dan Dr. Mohd Zaki Kamsah (kanan) sewaktu meninjau kesan tapak sejarah di Pulau Tanjung Surat, baru-baru ini.

Pulau Tanjung Surat yang mempunyai tiga buah kampung juga kaya dengan kesan-kesan sejarah peninggalan penjajah British

Pulau Tanjung Surat turut kaya dengan seni pembuatan jong atau kapal layar kecil oleh para penduduk kampung sebagai mata pencarian tambahan selain menjadi nelayan. Salah seorang pengukir jong, Mohd. Yatim Atan, 49, berkata, dia banyak menerima tempahan membuat jong sama ada bersaiz kecil atau sederhana untuk dijadikan sebagai barangan cenderahati buat pelancong.

"Jong paling kecil saya buat sepanjang setengah meter yang dijual dengan harga sekitar RM150 dan yang paling besar pula sehingga dua meter dengan harga mencecah RM750 bagi sebuah jong.

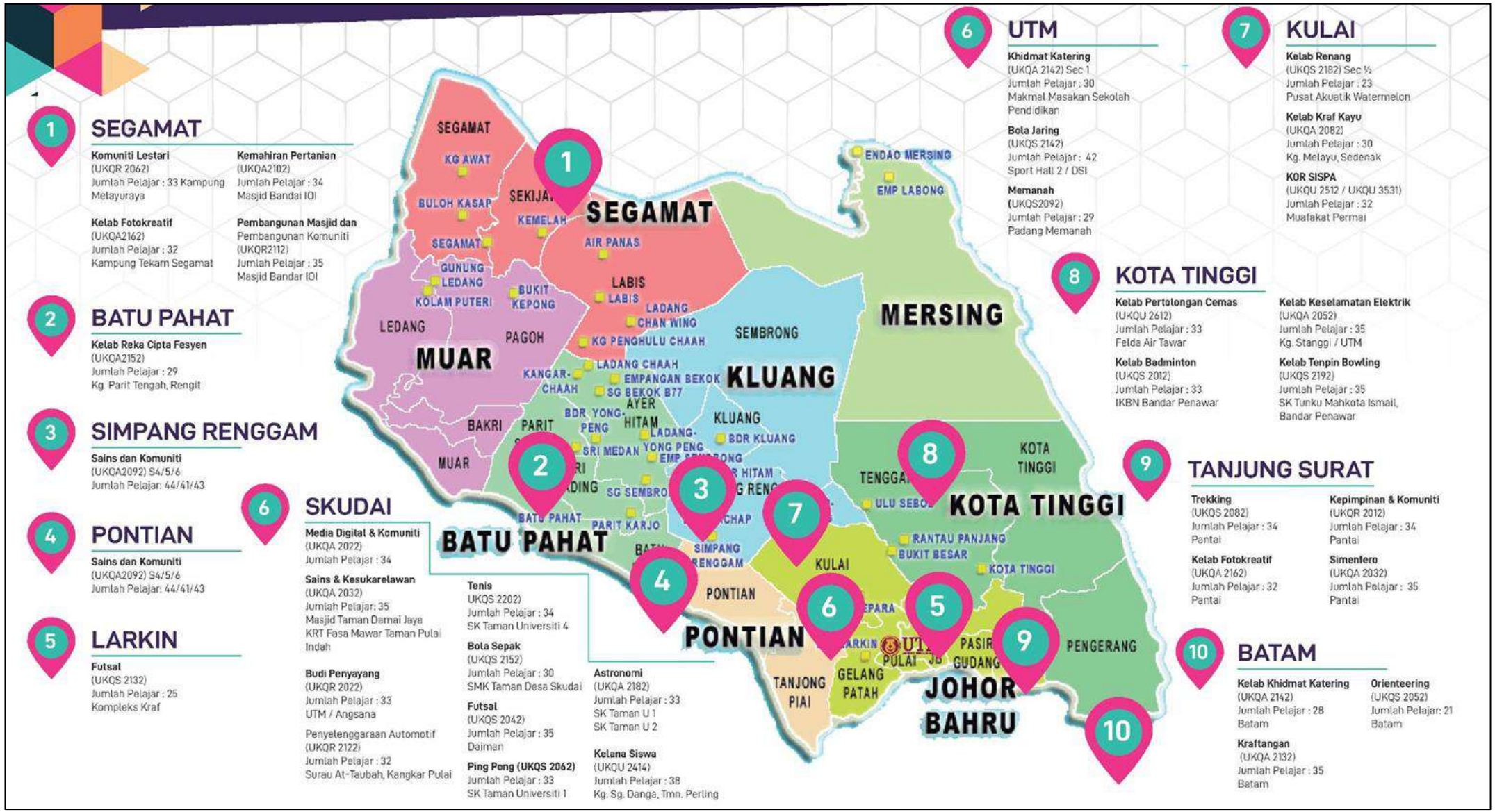
"Selain dijadikan hiasan rumah, jong yang besar juga dijadikan permainan serta pertandingan di sekitar pantai di pulau ini yang juga menarik ramai pemain dari Singapura dan Indonesia.

"Saya jadikan kerja membuat jong sebagai kerja sambilan jika tidak turun ke laut menangkap ikan. Biasanya, dalam sebulan saya mampu menyiapkan lima buah jong yang ditempah oleh para pelanggan," ujarnya.

Program yang diketuai Prof. Dr. Mohd Zaki Kamsah dari Fakulti Kejuruteraan UTM, Skudai itu turut membabitkan Fakulti Sains Sosial dan Kemasyarakatan dan Pusat Penyelidikan Marin UTM. Turut hadir dalam tinjauan sehari ke beberapa tempat yang berpotensi tinggi untuk dibangunkan sebagai sektor ekopelancongan itu ialah Naib Cancelor UTM, Tan Sri Dr. Salleh Mohd Nor.

JETI ini menjadi penghubung antara penduduk Pulau Tanjung Surat ke tanah besar Johor selain menjadi tempat hentian para nelayan mengeluarkan hasil tangkapan laut mereka. - Gambar SAIFUDDIN MOHD NOOR.

MOHD YATIM ATAN antara pengukir jong yang aktif menerima tempahan pelanggan termasuk dari Singapura dan Indonesia.



In this picture: Service learning initiatives throughout the state of Johor, conducted through the Centre for Academic and Experiential Learning (CAEL).

Image: UTM iLeaGue

Entrepreneurship

While CAEL looks at service learning initiatives, the Centre for Student Innovation & Technology (XCITE) looks at students' entrepreneurial initiatives.

The centre uses a funnel model in its operations:

- It provides exposure on entrepreneurship, skills to be an entrepreneur, and simulation activities on entrepreneurship to students
- It identifies students who are keen to take on entrepreneurship as a serious pursuit, and provide additional support to transform their ideas into start-ups

To date, the centre has had several successes with developing start-ups among the student population. One of the success stories is Charby, a range of smart charging products for mobile phones.

Scan QR code to access Charby website
(Note: this is not paid endorsement)

Charby was founded by Chik Sheng Fei, Lim Thol Yong, and Cheok Ming Jin, three students from the
School of Electrical Engineering.

The trio developed Charby Sense, a charging cable that prolongs battery lifespan by reducing overheating and putting strains on the battery. Each cable is coated with Kevlar fibre, material commonly used in bulletproof vest.

Charby raised funds on Indiegogo in order to commercialise the cables. Within just 18 hours, the campaign received more than 1,000 backers to pledge their support and raised more than RM 232,000 (USD 58,000).

During their study at UTM, the trio participated in various competitions, and have emerged champion in the National Robocon competition for two consecutive years in 2012 and 2013, the Autonomous Hovercraft Competition 2014, and Dreamcatcher Software Hackathon 2015, among others.

They were mentored by Assoc. Prof. Dr Yeong Che Fai, a Senior Lecturer at the School of Electrical Engineering, who is the founder of DF Automation & Robotics Sdn Bhd (DF).

The start-up is famous for Hospital Delivery Robot System called MCK19 or Makcik Kiah 19, the first Malaysian made delivery robot for hospitals to assist healthcare frontliners in delivery of healthcare services to patients with COVID-19.

The entrepreneurial spirit is also kept alive where Yap Sin Yee, another UTM student used a crowdfunding platform called mystart to seek funds for her internship at the Department of Psychiatry, Cambridge University.

The campaign had successfully secured RM10,000 from 171 supporters in less than three weeks, enabling Sin Yee to spend a semester in Cambridge University to complete her final year project.

DR SHAZWIN

In this page: Among the activities organised by XCITE to stimulate entrepreneurial culture among UTM students.

UTMXcite is a significant centre to explore, provide and measure the impact of entrepreneurship among students. In the future, the centre aspires to explore greater networking and collaboration opportunities between researchers and the industry, so as to concentrate its efforts in social entrepreneurship.

Image: UTM XCITE

Scan QR code to access XCITE Facebook page

Finding water quality solutions with hackathon

A SOLAR-POWERED product that measures several parameters of water to compute its quality index has won the Hack for Good 2.0: Connected Mangroves Hackathon at Universiti Teknologi Malaysia's Kuala Lumpur campus recently.

Named Hydro Health On-Demand, the project involved a real-time monitoring system deploying Narrowband-Internet of Things (NB-IOT) technology in measuring temperature, pH, turbidity, dissolved oxygen and heavy metal levels across various geographical areas.

NB-IoT is a low-power wide-area network radio technology standard developed by the third Generation Partnership Project (3GPP) to link up cellular devices and services.

This technology allows correlations to be made between the water source and its topology, community boundaries and population. It also allows real-time monitoring of water sources.

The project was developed by Team H20, comprising four mechatronics engineering students from UTM. They are Foong Siew Wei, 23, Lee Pin Loon, 22, Looi Kian Seong, 23, and Por Yu Kheng, 24.

Team leader Lee said they participated in the IoT in Water Quality Management category. It took them about one week to refine and finalise their idea.

"We came out with the idea to help have effective water quality monitoring to retain the sage quality of water sources. We think our product is scalable and sustainable for smart cities.

"We hope the awareness that we are creating would protect nature from pollution, and thus, provide an ideal environment for the growth of mangroves," said Lee.

The hackathon's concept was to stimulate innovation in IoT to support the mangrove ecosystem and create cases to accelerate cellular IoT adoption by universities and industries.

It was jointly organised by UTM, Universiti Putra Malaysia, Ericsson Malaysia, the Malaysian Communications and Multimedia Commission, Celcom Axiata, XPAND and the Higher Education Department.

Ericsson deployed a NB-IoT network within UTM's Kuala Lumpur campus in conjunction with the hackathon, which will be used for research and development in the future.

For the hackathon, teams could chose to join any of the four themes — IoT in Water Quality Management, IoT in Fisheries Production, IoT in Mangrove Ecology and Diversity, and IoT in Climate Change.

Winners of Hack for Good 2.0: Connected Mangroves hackathon with their prizes at Universiti Teknologi Malaysia in Kuala Lumpur recently.

The second place and third place went to Team Hummingbird 4.0 from Swinburne University of Technology, Sarawak campus, and Smart Krabb from International Islamic University Malaysia.

More than 40 entries were received with prizes totalling RM40,000 given out. The top 14 ideas were shortlisted and a Pre-Hack Workshop was carried out to prepare the participants for prototype development.

The participants were taken to Sabak Bernam, Selangor, to experience planting mangroves and identify its environmental issues.

By Zulita Mustafa

In this picture: UTM students winning a national hackaton competition through their solution on water quality management.

Image: UTM archives, 26 June 2019

Open education resources (OER)

In “A Basic Guide to Open Educational Resources (OER)” published in 2011, the Commonwealth of Learning (CoL) defined OER as follows:

Open Educational Resources (OER) describes any educational resources (including curriculum maps, course materials, textbooks, streaming videos, multimedia applications, podcasts, and any other materials that have been designed for use in teaching and learning) that are openly available for use by educators and students, without an accompanying need to pay royalties or license fees. (page 2)

UTM implements principles of OER in its teaching and learning activities:

- It uses Moodle to host UTM e-learning, the Learning Management System (LMS) to host materials, learning activities, and assessments
- It is a member of Open Courseware Consortium since 2011. The consortium consists of more than 200 universities from around the world, where members agreed to share digital learning materials developed by their academic staff.

The UTM academics develop course materials in the form of Massive Open Online Courses (MOOCs), and share the materials with learners from all over the world.

The following is a sample of courses that are available for registration on the UTM MOOC website:

- Dynamics of Leadership
- Data Structure and Algorithms
- “Mastering Malaysia English University Test (MUET)” series: reading, listening, writing
- Instructional and Learning Technology
- Process Integration: Pinch Analysis

These MOOCs are eligible for credit transfer, following guidelines under the Malaysian Qualifications Agency (MQA).

The university also exemplifies thought leadership in OER through its participation in OER policymaking. It contributed to the development of National e-Learning Policy back in 2011.

Dr Nurbiha A. Shukor , the Deputy Director for UTMLead participated at the Delphi study conducted by the Commonwealth of Learning to develop the Guidelines for Quality Assurance and Accreditation of MOOCs, published in 2016.

Dr Nurbiha is also a contributing member to the National Inclusive Open Education Resources (iOER) Policy, set to be launched in 2021. She also participated actively in the UNESCO Open Education for a Better World initiative as one of the mentors on the online platform .

Scan QR code to access UTM MOOC website

Scan QR code to access UTM open resources for online learning, a website developed for educators to address remote teaching needs during COVID-19 lockdown

Scan QR code to access UTM OER platform

Promoting learning innovation

NALI stands for New Academia Learning Innovation, a framework to promote innovative teaching and learning practices in education. It comprises student-centred and blended learning philosophy, multiple learning modes and materials towards achieving entrepreneurial academia.

Every year, the university organises a series of events for educators within and outside the university to share their innovative classroom practices.

In the picture: NALI 2020 Award recipient

An international community of practice for engineering educators

Prof. Dr. Khairiyah Mohd. Yusof and her team began to look at improving instructional practices in engineering courses as early as 2005.

They believed that students taking Introduction to Engineering course should be trained with problem solving skills. They should also be able to think, integrate, and delivery sustainability into their solutions.

This intent was carried forward through the development of engineering education as a discipline, where the art and science of pedagogy and instruction for engineering courses were complemented with empirical studies, training programmes, and published manuals and guidelines through the Centre for Engineering Education (CEE).

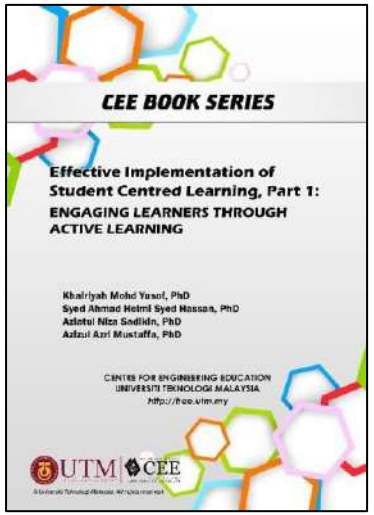
Over the years, the centre expanded its network and collaboration with engineering educators around the world through strategic international partnerships.

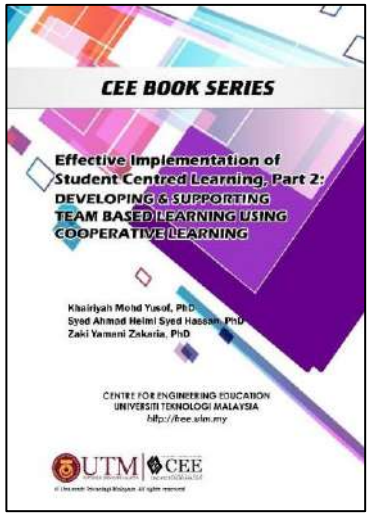
The Regional Conference in Engineering Education (RCEE), for example, is an annual affair, and a signature programme organised by the centre.

It also provides professional development programmes to fellow educators. During the global COVID-19 lockdown throughout 2020, CEE pivoted its training programmes online, reaching out to over 1,000 participants on its YouTube page at each live streaming session.

Since 2014, CEE worked with Iskandar Regional Development Authority (IRDA) to promote education for sustainable development for the Iskandar Malaysia economic region.

The collaboration culminated in an annual event called the RCE Iskandar Sustainable and Low Carbon Schools Exhibition 2020. This event enables UTM scholars and researchers to reach out to school teachers in Johor, in order to instill knowledge on sustainability to primary school students, and enable them to showcase their sustainability practices/projects.





In this page: Among the training workbooks developed by UTM CEE

Scan QR code to access UTM CEE website on training workbooks

Occupational safety and health

The Office of Occupational Safety and Health (OSHE) is committed in ensuring a healthy environment for all staff, students, and visitors to the UTM campuses.

It oversees the following operations on behalf of the university:

- Chemical management,
- Chemical waste management,
- Scheduled waste management,
- Indoor air quality monitoring, and
- Safety audit for workspace and lecture halls,

among others.

Recently, it adapted the ISO 45001 quality management system as a standard for institutional safety and health management.

The ISO 45001 requires high commitment from the top management to be accountable towards all safety and health measures undertaken by the university.

Educational resources

As an integral component to the academic programme, UTM Library supports the university's teaching, learning, consultancy and publication activities through research information services, resource development, and data repository, among others.

Recently, the Automation Section of UTM Library upgraded the university's library management system with KOHA Library System, an open source LMS. The automated system has helped reduced the annual maintenance cost for educational resources of the university.

Asset management and development

The Office of Asset and Development oversees facilities management of the university.

It enables the campus community to practice sustainable lifestyle by providing recycling bins in strategic locations across the university compounds. It also mandates waste segregation in order to enhance the amount of recyclable waste collected.

Working along with UTM Digital, JHB is also looking into digitalising waste operation management which includes classification, transportation, collection and storage of waste. In the long run, this will help saving operational cost.

Digital infrastructure and development

UTM Digital provides ICT infrastructure, support services, and system development in order to meet the needs of the university.

During the COVID-19 lockdown between March and July 2020, UTM Digital supported emergency remote learning and teaching for students.

Among the initiatives undertaken by the division include the following:

- Provide internet plan worth RM6,500 to students;
- Provide a total of 190 laptops to students from B40 households, using funds provided by Endowment Unit (40 units), and the Malaysian Hajj Pilgrims Fund Board (150 units),
- Arrange computer laboratories for students from other universities who live near the campus to complete their final examinations; and
- Provide round-the-clock technical support for UTM staff, following a surge of users on teleconference facilities subscribed by the university

UTM Digital aims to accelerate digitalisation of the university's operation, so as to realise the university's vision of becoming a Smart Campus. It has launched UTM Smart Apps, an application available on both iOS and Android devices.

Students and staff are able to manage essential over-the-counter services on the UTM Smart app, without being physically present at the campus compound. Current developments relating to the app are as follows:

- GIS tracking system for solid waste management,
- Shuttle bus schedule and location tracking,
- Course registration,
- Access to results and financial status (applicable for students),
- Scholarship application,
- Jobs on campus application,
- Leave application,
- Access to pay slip and human resource services (applicable for staff), and
- Staff health declaration and check-in during COVID-19 lockdown, among others.

UTMSmart Apps on the App Store

Inisiatif UTM jaga kebajikan pelajar, B40

Johor Bahru: Universiti Teknologi Malaysia (UTM) terus komited menyediakan inisiatif untuk membantu pelajar yang mempunyai masalah kewangan khususnya mahasiswa daripada golongan B40.

Timbalan Naib Canselor Hal Ehwal Pelajar UTM, Prof Dr Durrishah Idrus, berkata pihaknya sentiasa optimis melaksanakan pelbagai program yang mengutamakan bantuan dan kebajikan pelajar merangkumi aspek kewangan serta makanan.

Beliau berkata, hal ini sejajar dengan komitmen universiti yang sentiasa berpegang teguh dengan prinsip UTM-Prihatin.

"Inisiatif ini amat penting bagi menjamin kebajikan pelajar agar sentiasa terbela dan tiada satu pun daripada mereka yang terpaksa memadamkan impian untuk menggulung ijazah hanya semata-mata kerana masalah kewangan.

"Kira-kira 1,800 mahasiswa sudah mendapat faedah melalui Program Bantuan Makanan Mahasiswa di bawah *Because We Care Chancellor's Fund* bermatlamat membantu pelajar terputus belanja untuk membeli makanan yang dipernkenalkan sejak 2016," katanya kepada *BH Varsiti*.

Prof Dr Durrishah Idrus

Menjelaskan lebih lanjut, Prof Durrishah berkata program itu disalurkan melalui pemberian kupon buku bernilai RM300 kepada setiap pelajar yang berjaya melepasi tapisan temu bual dijalankan.

"Mana-mana mahasiswa yang layak akan menerima dua bentuk kupon bernilai RM1 dan RM5 serta senarai kafeteria dalam kampus yang menyertai skim ini.

"Kafeteria terbabit akan menerima kupon ini sebagai tukaran kepada makanan yang dibeli pelajar dan mereka (pengendali kafeteria) boleh menebus kupon dikumpulkan ini kepada wang tunai menerusi Pejabat HEP (Jabatan Hal Ehwal Pelajar)," katanya.

Selain bantuan makanan, UTM turut menyediakan pelbagai saluran kepada pelajar untuk memohon bantuan seperti bantuan zakat di bawah Pusat Islam, bantuan biasiswa khas yang diberikan oleh Unit Endowmen dan Wakaf Pendidikan UTM.

Program lain yang turut dilaksanakan termasuk *Suspended Meal* dengan konsep menaja makanan yang sudah dibayar oleh penderma di 10 kafetaria terbabit dan pelajar boleh mengambil pelekat bermagnet bernilai RM5 sebagai ganti kepada bayaran tunai.

Sementara itu, program *Caring Cabinet* atau 'Almari Kasih Sayang' pula memfokuskan makanan dan minuman yang diletakkan dalam almari seperti roti, biskut serta air mineral di mana pelajar boleh mengambilnya pada bila-bila masa.

Program makanan percuma *dilaksanakan UTM adalah usaha murni yang mampu mengurangkan bebanan kewangan golongan pelajar memerlukan.*

INFO

7 LANGKAH MENCAPAI KEBEBASAN KEWANGAN

UTM Cares

Help is a phone call / a text message / an email / an office visit away for all UTM students.

Should they need help, they are able to access the following through the Office of Student Affairs:

- Food assistance – through the 'Because We Care' Chancellor's Fund
- Daily sundry needs – through Caring Cabinet located across the campus
- Daily stipend needs – Islamic Centre

Image: UTM archives, 14 November 2019

UTM Endowment Fund

Education is for all. However some may not have access to education due to various barriers.

For UTM students, the barriers came in three main forms:

- Socio-economic background of their families
- Access to infrastructure that enables the students to continue their studies, such as Internet access, and availability of digital devices
- Access to sustain oneself throughout their day-to-day activities

The idea to establish an endowment fund for UTM came as early as 2010.

It was found that over half of UTM student population came from the bottom 40 percent (B40) household, defined as families with monthly income of less than RM 3,000.

There was a strong need to rally support for these students to pursue scholarly excellence, primarily through financial assistance such as scholarships and bursaries for full-time studies at UTM.

Responsibilities

- Develop policies and guidelines for disbursement of financial aid to UTM students
- Report status and implementation to related governance bodies, such as Board of Trustees / Board of Directors
- Run programmes to seek funding from stakeholders
- Provide attractive incentives for sponsors, such as double tax deduction and naming rights to buildings in UTM
- Obtain input from other divisions / departments in UTM on students seeking education aid
- Engage in strategic partnerships to increase financial aid endowed to UTM for educational purposes

During the global COVID-19 pandemic, the barriers hindering learning were exacerbated. The physical campus, once a safe haven for students to study, live, and play, is closed from March 2020. Two out of the three UTM campuses – Johor Bahru and Kuala Lumpur – are currently located within red zones of the COVID-19 spread in Malaysia, and are subjected to safety measures mandated under the Conditional Movement Control Order (CMCO).

Through UTM Endowment, the following initiatives were implemented to support students as they learn remotely from UTM:

- Laptop handout (40 units) to students within the B40 income bracket
- One-off financial aid amounting to RM 200/student
- Flight ticket sponsorship to students wishing to return to their hometowns

The support provided to UTM Endowment also extends to UTM staff. In this respect, staff from low-income families are also given opportunities to access financial assistance to weather the unexpected storm caused by the global pandemic. One example of such initiative is the Caring Cabinet initiative, where they can pick up sundry items for daily use through open cupboards at designated locations across the campus. The staff can also request for one-off cash aid during festive seasons.

The Endowment Unit, which governs and implements all initiatives under UTM Endowment, aspires to drive the agenda further by promoting knowledge endowment to the public.

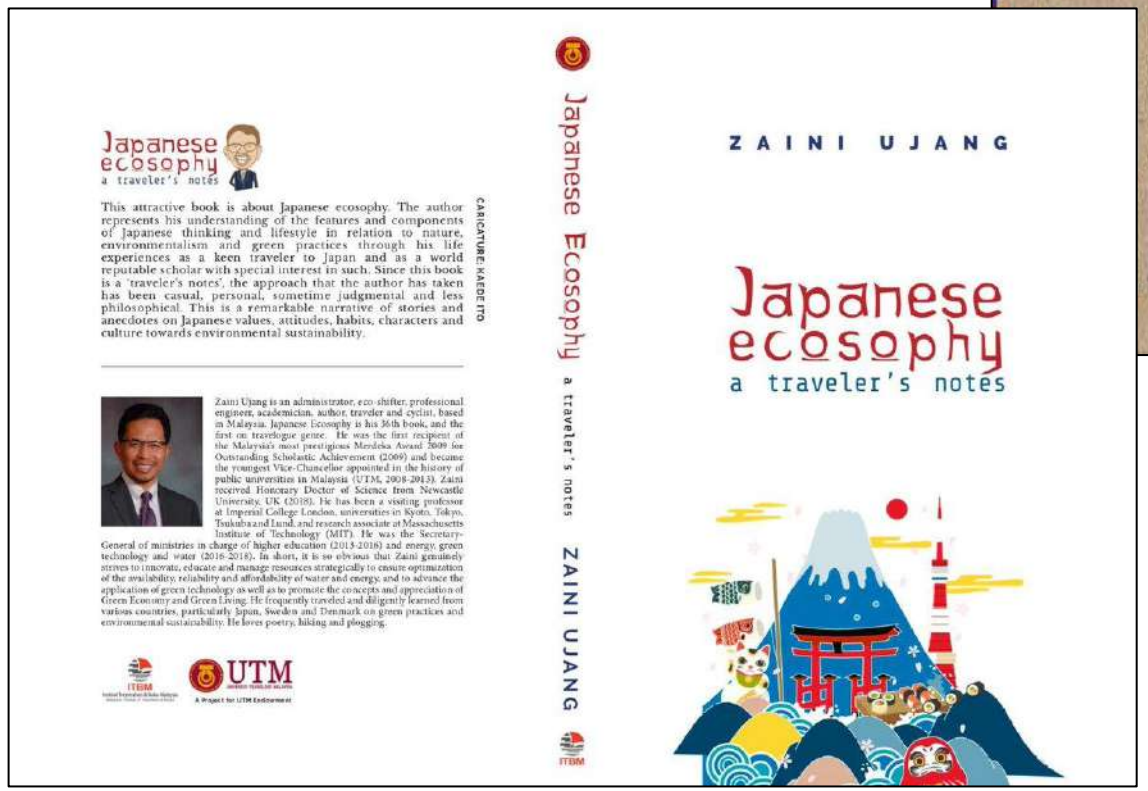
Under this concept, individuals are encouraged to contribute their knowledge to be translated into books and curated content rights. These are then monetised and pegged as contributions for UTM endowment.

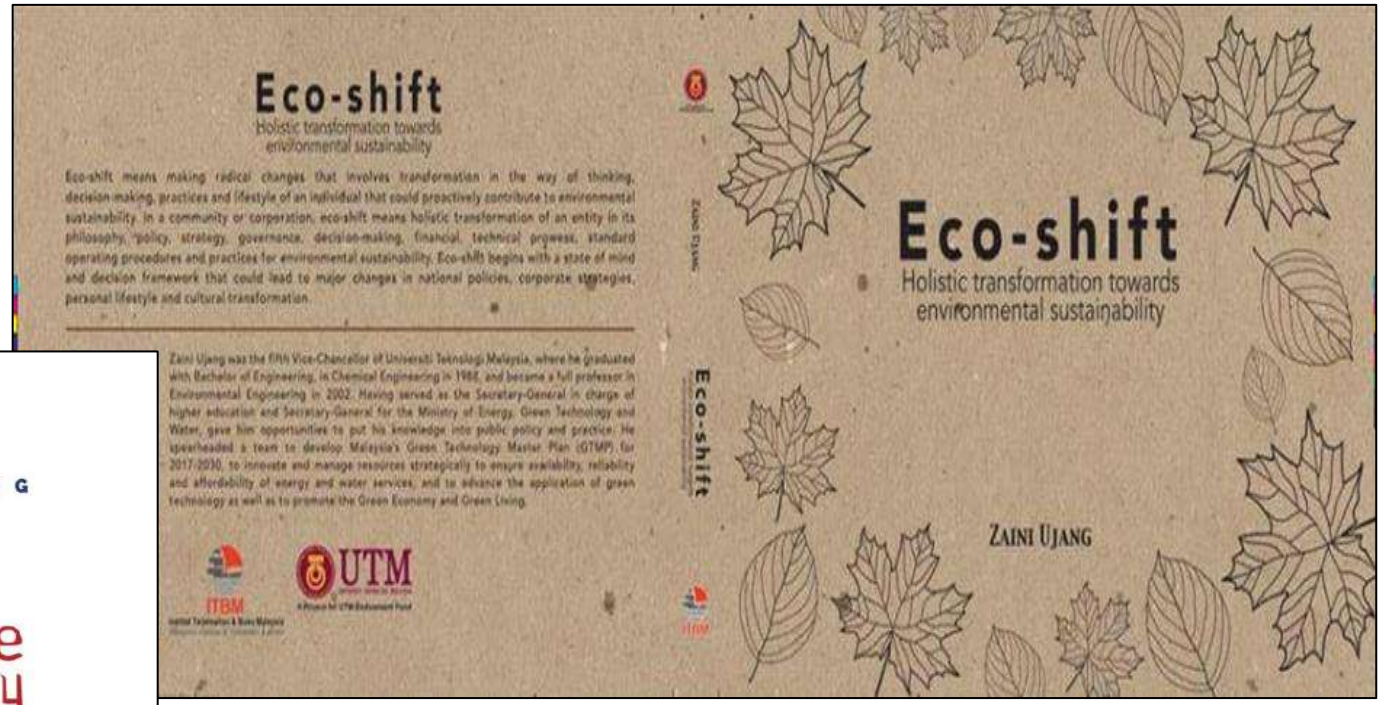
At present time, Dato' Seri Ir Dr Zaini Ujang, the Secretary General for the Ministry of Environment and Water, who is also the former Vice Chancellor of UTM, is the first individual who have endowed his knowledge for the university, in the form of two books:

- *Eco-shift: Holistic Transformation Towards Environmental Sustainability*, and
- *Japanese Ecosophy: A Traveller's Note*

Since 2011, a total of RM 25,305,826 in scholarships were disbursed to 743 students through the UTM Endowment fund:

Scholarship name	#	RM
UTM-Azman Hashim	56	1,168,500
UTM-Tan Sri Ainuddin Wahid	18	4,019,465
UTM-Hitam Abdullah	2	27,000
UTM-Daing Abdul Rahman Daing Mohamad	2	27,000
UTM-Al-Bukhary	14	358,000
UTM Alumni	14	358,000
UTM-Merdeka	637	19,669,861





Books written by Dato' Seri Ir Dr Zaini Ujang, of which proceeds of the book are channelled back to UTM Endowment.

Images: (left) @ZainiUjang2 (Twitter), (right) UTM News and Events website

#DNAUTM

In the picture: Dato' Seri Ir Dr Zaini Ujang, the Secretary General for the Ministry of Environment and Water, came to the UTM Johor Bahru campus for a site visit along the recreational trails of UTM on 23 August 2020.

The trail is part of a national-level initiative called the National River Trail under the Ministry of Environment and Water, where over 10,000 km of river trails are earmarked for conservation.

Image: UTM Office of Corporate Affairs

Community engagement

UTM's longstanding commitment to engage and serve the community started with the establishment of University-Community Transformation Centre (UCTC) in 2014.

This centre was later rebranded as the Centre for Community and Industry Network (CCIN), and remains an integral component for the university's community engagement today.

In the UTM context, 'community' is defined as

... living beings that receive benefit from engagement activities, which includes humans, animals, and plants...
(Item 1.5, Policy on Community and Industry Engagement)

Community engagement is for all. In the university anthem *Keunggulan Terbilang* (Distinct Eminence), service to community is mentioned as one of the five responsibilities of a UTM staff/student, alongside teaching, research, publication, and consultancy.

Doing community engagement

CCIN defines sustainability in terms of building strong partnership and symbiotic collaboration between government, university, community, industry, and the civil society which results in sustainable societal impact.

Through stakeholder engagement, CCIN has identified five focus areas for community engagement:

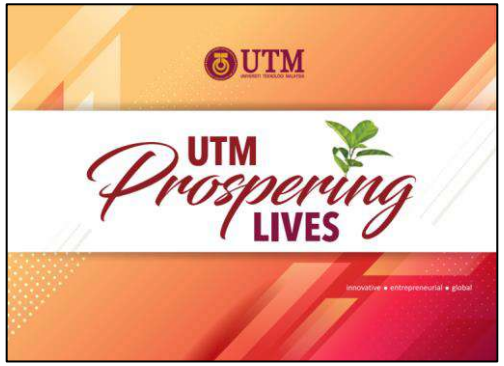
- Social entrepreneurship
- Improving livelihood
- Education enhancement
- Capacity building
- Environmental sustainability

These focus areas are operationalized through local, national, and industrial grants under

- Knowledge transfer programme (KTP),
- University Social Responsibility (USR) Programme, and
- Service learning programme.

Alongside the vision to contribute to the global sustainability agenda, community engagement projects from UTM should also be translational, leveraging on core strengths of the university in science, technology, and engineering to address industrial and societal issues.

Note: Item 1.5 is translated from Bahasa Malaysia version. Should there be any discrepancies, the Bahasa Malaysia version takes precedent



Information obtained from UTM Prospering Lives, a quarterly publication that highlights community engagement projects conducted by UTM.

Website:
https://corporateaffairs.utm.my/corporatepublication/corporate-ebook/

University for community

In the picture: Her Majesty Raja Zarith Sofiah ibni Almarhum Sultan Idris Shah, the UTM Chancellor visited the Edible Lawn (*Laman Edible*) at the Kangkar Pulai New Township Flat in Skudai, Johor Bahru on 15 January 2020.

This initiative is part of a larger project called *Bangsa Johor Bahagia*, carried out in collaboration between UTM, the Raja Zarith Sofiah Foundation, of Johor, and the Iskandar Putri City Council.

Image: Supandi Bunagin

Measuring community engagement

Unlike research projects, where impact is measured in terms of grants receivable, papers published, and research manpower trained, the impact of community engagement projects can be difficult to measure.

CCIN facilitates UTM staff to objectively measure the impact of their community projects. This is conducted through the following:

#1: Clear definition and demarcation of what constitutes a "community engagement" project

While all forms of community engagement projects are accepted, he university community is strongly encouraged to carry out knowledge transfer projects, which are more sustainable in the long term, and involves elements of technology transfer or expert consultation.

#2: Formal registration of projects on research management system

All community engagement projects must be registered on UTM Research And Development Information System (RADIS).

#3: Project teams are required to keep records of all activities in their community engagement projects

These include, but not limited to:

- Media coverage reports / articles (online and/or offline)
- Sponsorship letters / funding acknowledgement
- Evidence of partnership contribution, in terms of MoU / MoA / letter of intent
- Photos and videos
- Montages of activities
- IPs such as copyrights that are approved by the UTM Innovation and Commercialisation Centre (ICC)

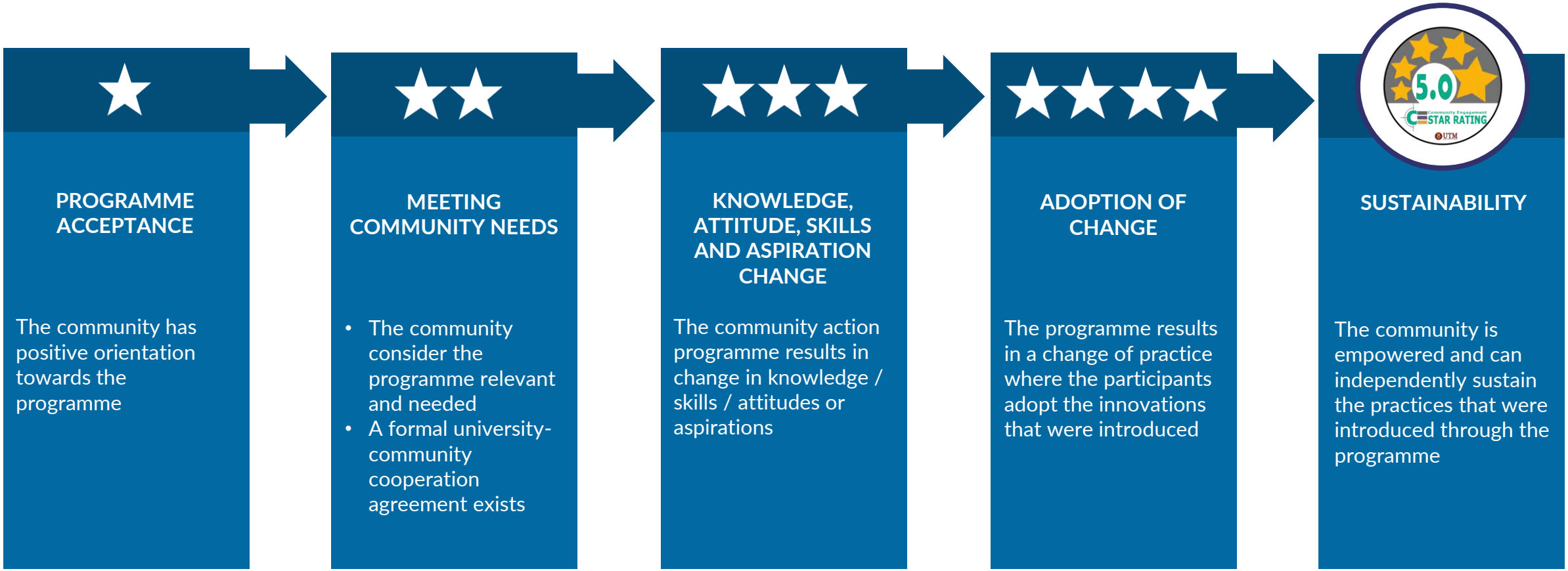
#4: Project leaders are required to conduct self-assessment following the CCIN 5-star rating system

The assessment is an annual exercise conducted at Q4 of the year (October – December) for all community engagement projects in UTM.

UTM staff whose community engagement projects are rated 3 stars and above are eligible to claim bonus marks under the annual performance appraisal system, as stipulated under UTM Administrative Circular 9/2016.

Projects that are rated 5 stars are eligible for submission into the UTM Citra Karisma Award, a university-level performance appraisal ceremony typically held in Q3 of the year (July – September).

The UTM Community Engagement Star Rating System breakdown is as follows:



UTM Green Leaf

UTM introduced the Green Leaf annual sustainability audit in 2018.

Green Leaf was set up to facilitate the university management in enhancing sustainability efforts in the university, by initiating data collection efforts that would eventually lead to evidence-based decision making on sustainability for UTM.

The audit calls for all-of-campus participation of students and staff, through joint collaboration across all stakeholders in preparing a baseline benchmark on sustainability efforts at each organisational level of UTM.

It also enables the university community to initiate a formal, structured, and systematic process of sustainability assessment for UTM, by identifying factors that affect effectiveness of sustainability initiatives at the university.

The university sets an annual target of at least 30 percent of divisions / faculties / schools / academies audited every year obtain 3 out of 5 Green Leaf rating.

The audit is conducted based on several rounds of discussion and strategic planning through a technical committee, with membership comprising of representatives from various divisions / faculties / schools / academies in UTM.

The following table illustrates participation rate of UTM entities in 2019:

Category	Green leaf				
	1	2	3	4	5
Faculty / schools	3	5	1	-	-
Department / offices	10	3	1	-	-
Residential colleges	1	-	3	-	-

There are five areas assessed in the Green Leaf audit, encompassing a total of 92 indicators. An overview of items assessed is shown in the following table:

Areas	Items assessed
Area 1: Unit profile	Unit background and description
Area 2: Management	• Policy and sustainability organisation • Sustainability planning • Financial management • Facility management • Procurement and contact
Area 3: Education and research	• Curriculum • Publication • Sustainability literacy • Living laboratory
Area 4: Community	• Sustainability activities • Community service • Disaster management and mitigation
Area 5: Environment	• Infrastructure • Energy management • Waste management • Water management • Transport

The Green Leaf Sustainability Audit breakdown is as follows:

The sustainability champions @ UTM

The 2019 winners for the sustainability category are as follows:
•Left image: School of Computing (faculty level),
•Middle image: Office of Deputy Vice Chancellor (Research and Innovation) (office level), and
•Right image: Kolej Rahman Putra (residential college level).

Global partnership and visibility

International collaboration

UTM International plays a crucial role in revitalising global partnership for sustainable development. The Office has been leveraging on networks to provide quality education access for all, for instance, online global classroom (OGC).

The Malaysia Sustainable University Campus Network (MYSUN) is a project under ERASMUS+, where UTM contributed its expertise in engineering education.

Other ERASMUS+ projects in which UTM is a member are as follows:

- Strategic IP Management for Effective R&I in Asian Higher Education (project coordinator)
- Assessing and Improving Research Performance at South East Asian Universities (project member)
- Tuning Asia – South East (project member)

International benchmarking – Times Higher Education Impact Rankings

UTM International works together with UTM Campus Sustainability to coordinate a Task Force on THE Impact Rankings.

Other UTM entities which contribute to this endeavour are as follows:

- Strategic Management Office, Office of UTM Vice Chancellor
- Office of Deputy Vice Chancellor (Academic and International)
- Office of Deputy Vice Chancellor (Research and Innovation)
- Office of Deputy Vice Chancellor (Student Affairs)
- Office of Deputy Vice Chancellor (Development)
- Office of Bursar
- Office of Registrar
- UTM Research Alliances
- UTM Library

The terms of references for this taskforce is as follows:

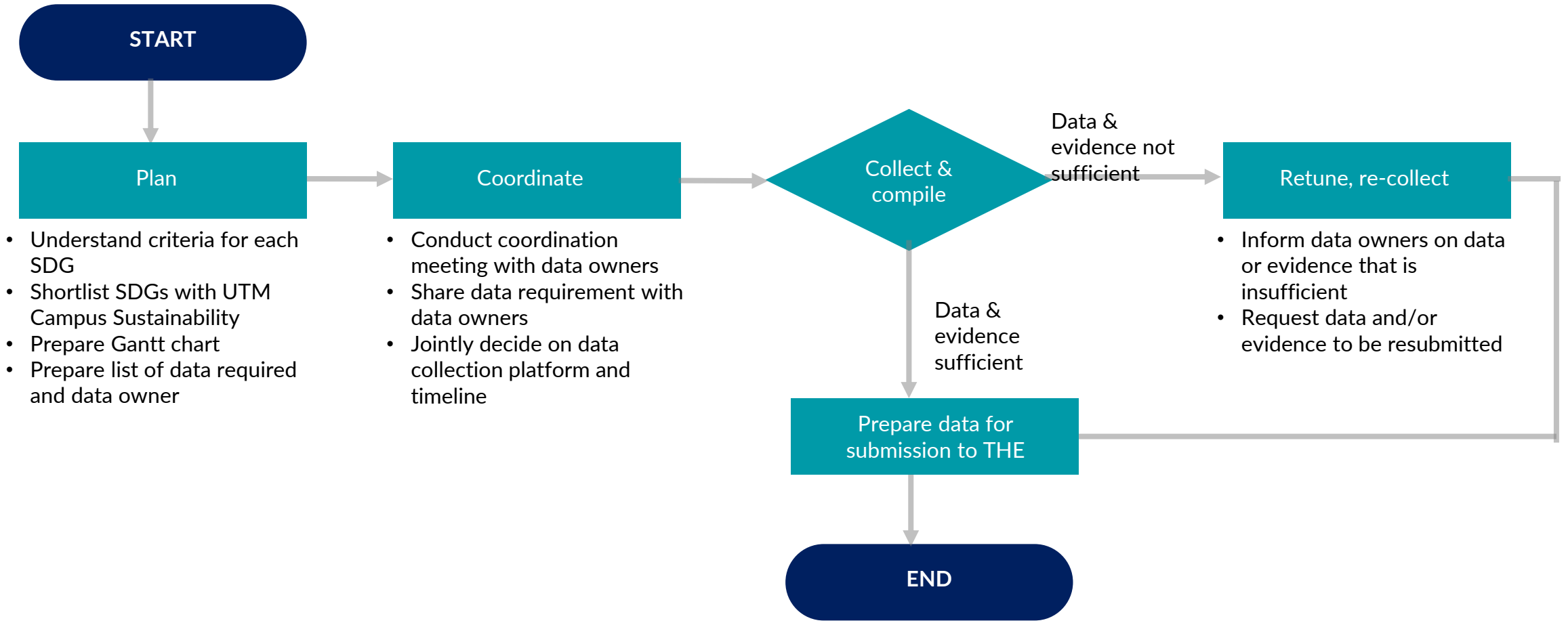
(A) Data collection and reporting

- Identify data owners for related SDG indicators
- Coordinate with data owners to identify evidence applicable for data point(s) submitted
- Collect data and evidence from data owners
- Submit data and evidence

(B) Develop institutional insights

- Analyse institutional performance for each SDG
- Conduct simulation exercises in order to benchmark against other universities
- Identify gap
- Prepare action plan for university consideration and approval

The following flow chart shows the processes applicable in data submission to THE Impact Rankings:



The following figure shows SDGs practices in UTM for 2019 , 2020 and 2021:

International benchmarking – UI Green Metric World University Ranking (UI-GMR)

The UI-GMR is a global ranking that is used to assess policies and activities within green campuses so as to promote a sustainability culture in higher education. To date, the ranking is considered as one the most important global sustainability rankings for universities.

Universitas Indonesia develops and maintains UI-GMR since 2010. It is administered through in an online questionnaire which covers six categories:

- Setting and infrastructure,
- Energy and climate change
- Waste,
- Water,
- Transportation, and
- Education and research.

Each category comprises of several indicators., with a total of 39 indicators across the six categories. A specific score is assigned to each indicator.

The final score is the sum of the scores achieved for each indicator, with the maximum score being 10,000 points.

For the 2020 edition, a total of 912 universities took part in the ranking.

The figure below illustrates UTM's performance between 2016 to 2020:

Despite the criticism over the changing indicators and the lack of transparency, the UI-GMR lays a good foundation for universities around the world to incorporate sustainability into their strategy and operations. The tool also has good technical rigorousness that can objectively quantify institutional efforts in sustainability.

Summary

Recap (see Reporting Framework, 1.5)

OPPORTUNITIES	ORGANISING PRINCIPLE
STEP 3: Identify priorities, opportunities and gaps	**STEP 5:** Monitor, evaluate and communicate
What is UTM good at? What can the UTM community do better, in order to strengthen its involvement and contribution in the overall sustainability agenda? Where should UTM concentrate its efforts and investments in the future?	How might UTM Campus Sustainability - as the main office mandated to oversee strategic direction and implementation on sustainability at UTM – better manage the following: • Monitoring, • Evaluation, and • Strategic communication on strategy?

1

Be specific

Set up a standard 'sustainability report card' that shows clarity on the type of indicators required

2

Start with why

Explain rationale behind sustainability beyond the agenda on rankings / KPIs – people, planet, prosperity, peace, partnership

3

What's the science behind it?

Convince, persuade, and inform through data

4

Capture the heart & soul

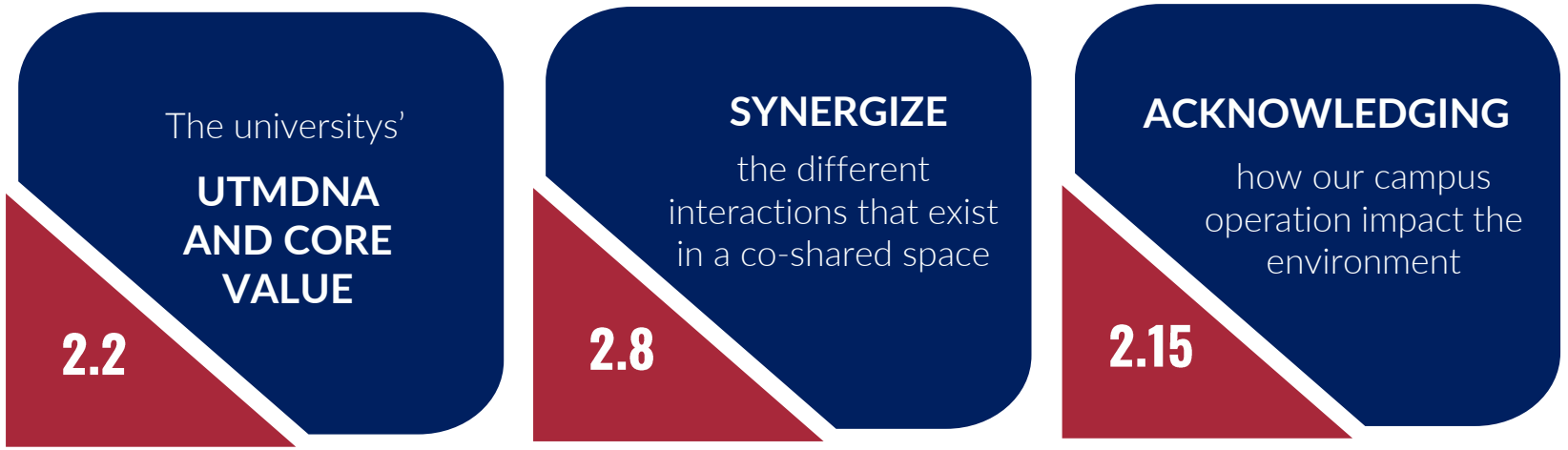
Each initiative starts with an intent, hope, and a dream; what is the story, and why should I spend time on this story?

Image: Kai

5

Way forward

UTM Campus Sustainability Role



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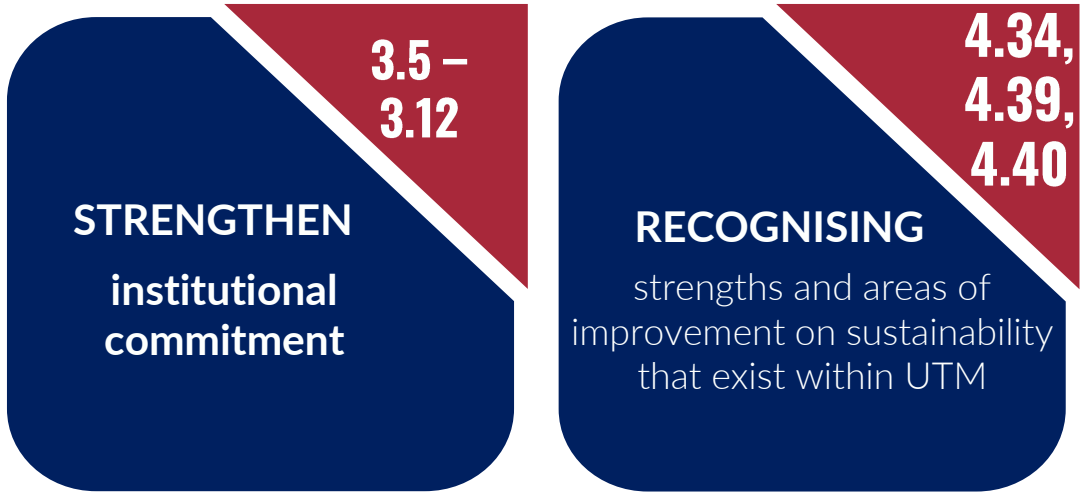


Pages in the report that reflect this observation

For UTM entities that were interviewed for this report, sustainability paints a different picture:

Governance

Office of Deputy Vice Chancellor (Development) -

- Financial sustainability
- Encouraging sustainable lifestyle
- Conserving biodiversity

Office of Registrar -
Developing UTM staff as change makers for the future

Conceptualisation

UTM Campus Sustainability -
Driving sustainable institutional development through behavioural change

Implementation

Office of Deputy Vice Chancellor (Student Affairs) -
Nurturing holistic, balanced,and entrepreneurial graduates

UTM iLeaGue -
Quality education for all through service learning & entrepreneurship

UTMLead
Open access to education anywhere and anytime, to everybody

Centre for Engineering Education -
Quality engineering education for all through an international community of practice

Service provider

Office of Occupational Safety and Health -
Safe and healthy environment

UTM Library -
Quality education to all through knowledge conservation and dissemination

Office of Asset and Development -
Enhance strategic and effective communication to

UTM Digital -
Providing resilient and future-ready infrastructure & infostructure

UTM Endowment -
Ensure financial access that enables quality education

Data collection, analysis & reporting

Centre for Community and Industry Network -
Strong partnership and symbiotic collaboration between university, community and industry

UTM Campus Sustainability -
Internal benchmarking for informed decision-making on sustainability

UTM International -
Global partnership and visibility for institutional excellence

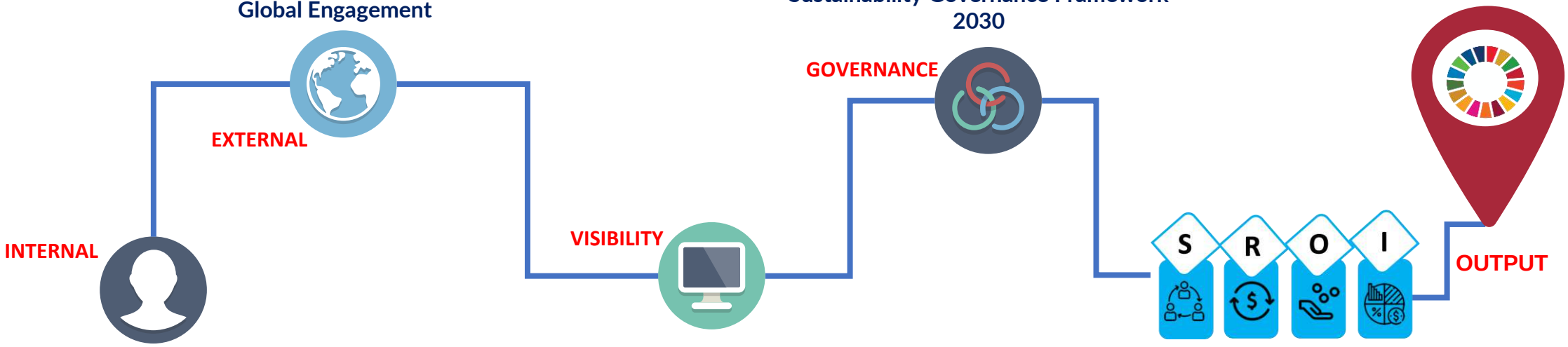
Way Forward

a) Actively participate in the existing and new networking, in formal and informal platform
b) Exploring the quadruple helix collaborative innovation
c) Increase campus wide engagement in sustainability beyond performance index and ranking

a) Sustainability Action Plan in UTM
b) Strengthening key stakeholder engagement & initiatives
c) SDGs across target, indicator for mutual understanding and empowerment

Strengthen the Partnership and Global Engagement

Sustainability Governance Framework 2030



Well-being and Resilience of Stakeholders in UTM

a) Empowering Jawatankuasa 3S (JK 3S) - Sihat, Selamat dan Sejahtera
b) UTM Living Laboratory as the 'shifting agenda' in enhancing sustainable concept, practices and improvement
c) Sustainable behaviour and self feeling as part of the ISES core-value to link between personal traits and campus community

Analytical Big Data Management in Sustainability Elements

a) Cloud management system in SDGs across Higher Learning Institution core values
b) Reporting of SDGs in terms of dashboard and survey
c) Visibility of reports to external stakeholders

Emphasis the Impact Rating of Social Entrepreneurship (SE) as Part of Social Return of Investment (SROI)

a) Synergy initiatives & effort among students and staffs
b) Increase the contribution of social community benefits from homegrown research, innovation and commercialization
c) Align the social enterprises in campus with SDGs and national agenda

End notes and acknowledgements

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