UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SDG REPORT 2023

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UNIVERSITI TEKNOLOGI MALAYSIA

This report is dedicated to the UTM community

who have passionately navigated a transformative journey toward sustainability, shaping the university's impact on campus, online, and in every corner of the world where their influence reaches.

It is also a tribute to future students, staff, and collaborators, both within Malaysia and across global horizons, who will carry forward this legacy of innovation, stewardship, and shared responsibility.

May our collective endeavors be met with success and recognition, in this world and the Hereafter, as we strive for a more sustainable and just future.

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Foreword

Prof. Datuk Ts Dr Ahmad Fauzi Ismail
7th UTM Vice Chancellor (1 January 2021 – 30 November 2024)

Assalamualaikum wm. wbt, Salam Sejahtera, and Salam UTM Sanjungan Bangsa.

In 2023, Universiti Teknologi Malaysia (UTM) strengthened its commitment to sustainability and the United Nations' Sustainable Development Goals (SDGs). Through the dedication of our students, faculty, and partners, we made notable progress this year in areas such as clean energy, innovation, and education.

UTM was proudly ranked among the top 200 universities globally in the Times Higher Education (THE) Impact Rankings, leading the world in SDG 7: Affordable and Clean Energy. This recognition underscores our dedication to accessible, sustainable energy for both our campus and the wider community.

Our journey, however, is far from over. Addressing today's environmental and social challenges requires ongoing innovation and collaboration. As a leading technology university, UTM's research prioritises real-world sustainability solutions, guided by our Sustainability Blueprint 2030, which focuses on carbon neutrality, ecosystem resilience, and sustainable production.

We believe that education is a catalyst for change. Our programmes prepare students to address complex sustainability challenges and become responsible leaders. Our research targets pressing global issues such as climate change, resource scarcity, and social inequality.

Looking ahead, UTM will continue to champion sustainability locally and globally. Our partnerships with industry, government, and international organisations will enable us to expand our impact and accelerate progress towards the SDGs, fostering a fairer and more sustainable world for future generations.

To everyone supporting UTM's sustainability mission, we thank you for your commitment. Let us continue to work together to inspire positive change in communities around the world. I look forward to all we will accomplish together.

UTM, Innovating Solutions
In the Name of God for Mankind

PROF. DATUK IR. TS. DR. AHMAD FAUZI BIN ISMAIL
Vice-Chancellor

Preface

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

The Sustainable Development Goals (SDGs) Report is a crucial document that reflects Universiti Teknologi Malaysia (UTM) commitment to aligning its mission and operations with the global sustainability agenda. The primary purpose of this report is to demonstrate how UTM is actively integrating the SDGs into every facet of university life—academics, research, campus operations, and community engagement—and to transparently communicate our progress and impact. Through this report, UTM showcases its role in addressing urgent global challenges, such as climate change, social inequality, and sustainable economic growth, positioning the university as a leader in sustainability within the higher education sector.

The preparation of the SDGs Report is more than just an exercise in accountability; it is a strategic effort to benchmark UTM's achievements against international standards and best practices. By documenting our initiatives and outcomes, the report helps us identify areas of strength and opportunities for further improvement, ensuring that our approach to sustainability is both comprehensive and data-driven. This alignment with the SDGs enhances UTM's credibility on the global stage, strengthening our institutional reputation and increasing our attractiveness to prospective students, faculty, research collaborators, and funding partners who prioritize sustainability.

In the highly competitive landscape of global higher education, universities are increasingly expected to contribute solutions to the world's most pressing problems. The SDGs Report positions UTM as a forward-thinking institution that not only educates students but also fosters real-world impact through research and community partnerships. By highlighting our efforts in areas such as renewable energy research, social equity programs, and sustainable campus operations, the report underscores UTM's commitment to creating a positive societal impact and producing graduates who are prepared to lead in a sustainable world.

This proactive approach enhances UTM's standing in global university rankings and sustainability assessments, which often consider contributions to the SDGs as key indicators of an institution's relevance and influence.

Moreover, the SDGs Report serves as a powerful tool for fostering collaboration. By transparently sharing our strategies and successes, UTM invites partnerships with other universities, government agencies, industries, and non-governmental organizations. These collaborations amplify our impact, enabling us to pool resources and expertise to address complex challenges more effectively. As part of the global academic community, UTM understands that achieving the SDGs requires collective effort. Through this report, we communicate our commitment to being an active contributor to these global efforts, reinforcing our role as a catalyst for sustainable development both locally and internationally.

In essence, the SDGs Report is a testament to UTM's dedication to sustainability, innovation, and societal impact. It not only reinforces our institutional values but also serves as a strategic asset that drives recognition, attracts resources, and builds partnerships. By embracing the SDGs as a framework for growth and accountability, UTM is not only enhancing its own capabilities but also contributing to a global movement that seeks to create a more equitable, resilient, and sustainable world for future generations.

INTRODUCTION

1

Covering UTM's Achievements in Integrating the Sustainable Development Goals (SDGs)

Introduction and Overview

The year 2023 marked a significant period in Universiti Teknologi Malaysia (UTM) ongoing journey towards embedding the Sustainable Development Goals (SDGs) into its core operations, academic framework, and community outreach. The SDGs, established by the United Nations in 2015, represent a universal call to action to tackle some of the most pressing challenges facing our world today, including poverty, inequality, climate change, environmental degradation, peace, and justice.

UTM has aligned itself with these global objectives by integrating the SDGs into its strategic planning, research initiatives, and campus activities. The UTM SDG Report 2023 provides a comprehensive analysis of the university's efforts to contribute meaningfully to the achievement of these goals. Through this report, we reflect on our achievements, assess the impact of our initiatives, and outline the challenges we have faced along the way.

UTM's Commitment to Sustainability

UTM's commitment to sustainability is deeply rooted in its mission to be a leading academic and research institution that not only imparts knowledge but also contributes to the betterment of society. In 2023, UTM intensified its efforts to incorporate the SDGs across all facets of the university's operations. This commitment is evident in the university's strategic initiatives, policy developments, and the creation of dedicated bodies such as the Campus Sustainability Office, which spearheads UTM's sustainability agenda.

UTM's approach to sustainability is holistic, encompassing not only environmental stewardship but also social equity, economic viability, and institutional governance. The university has taken significant strides in promoting sustainability through its curriculum, research, and community engagement, ensuring that these efforts are in line with the broader goals of the SDGs.

The "enVision UTM 2025" is part of the Moonshot Transformative Journey 2.0, outlining Universiti Teknologi Malaysia's strategic focus areas. The plan emphasizes five key priorities (SP1 to SP8). First, it aims to produce future-oriented high-quality graduates by enhancing academic quality, research-led teaching, and student experiences (Key HIR 10). Second, it focuses on research impact, aiming to increase research grants, knowledge transfer, citations, and commercialization efforts (Key HIR 3). Third, the sustainability pillar addresses ethical leadership, financial planning, and campus facilities (Key HIR 4). Fourth, digital transformation targets talents, optimization processes, and enhancing digital infrastructure (Key HIR 4). Lastly, the plan emphasizes global eminence through improving global rankings, international branding, and student experiences (Key HIR 4). Additionally, the corporate niche strategy aims to align the institution with industry needs (Key KR 12). The entire strategy is guided by the principles of Integrity, Synergy, Excellence, and Sustainability (ISES), aiming to innovate impactful solutions.
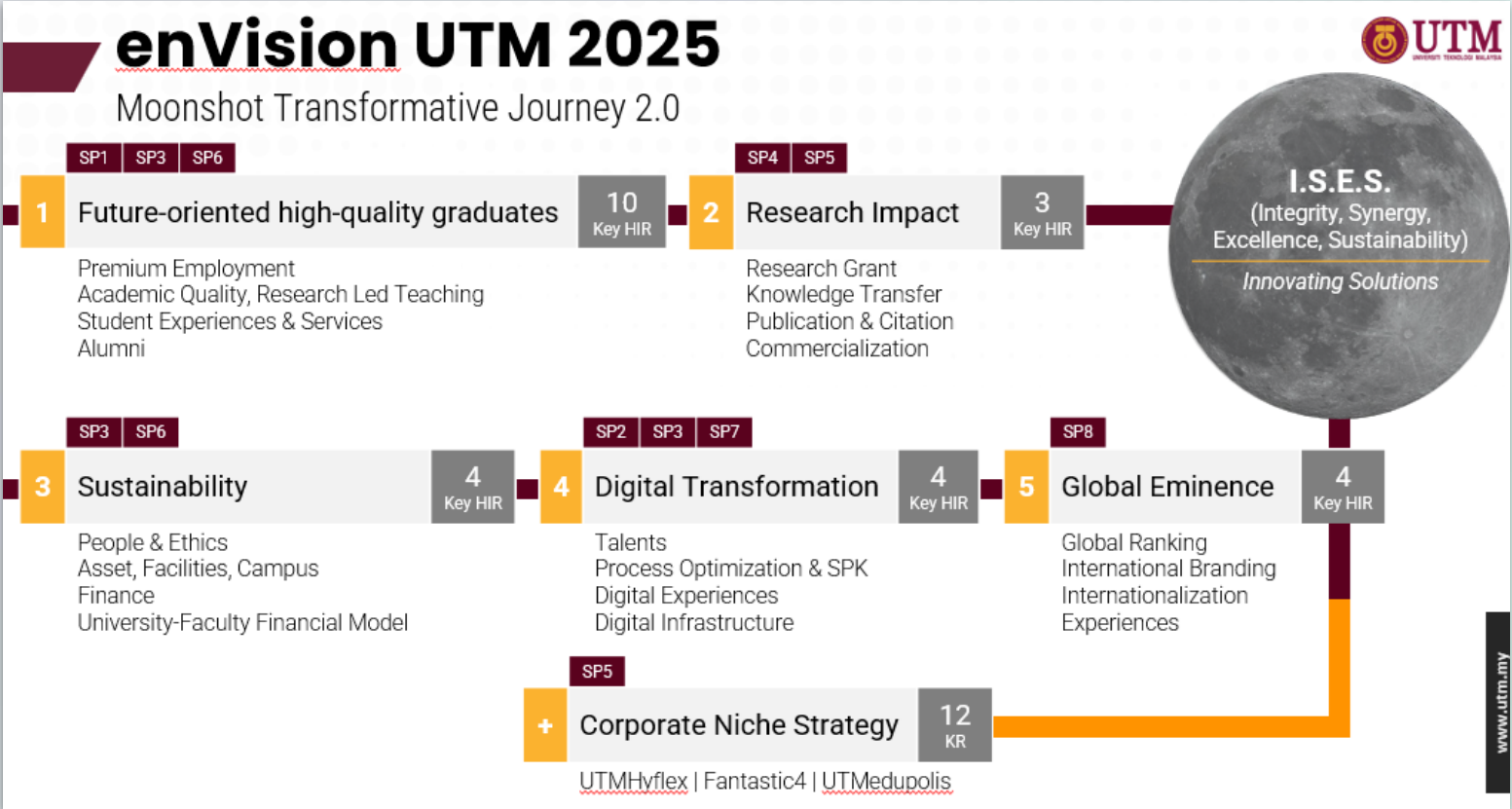
LOCATION OF UTM

The innovation-driven entrepreneurial research university, UTM boasts of three beautiful campuses in Johor Bahru, Pagoh, and Kuala Lumpur, Malaysia

1 UTM JOHOR BAHRU

2 UTM PAGOH

3 UTM KUALA LUMPUR

2

50
Hectares Agritechnology Campus

Integrated
With Edu Hub Pagoh

3

19
Hectares City Campus

Strategic
Located in the Heart of Kuala Lumpur

1

1,222
Hectares Green Campus

20 min
To Singapore

90 min
To Indonesia

UTM
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Faculties

9 UTM JOHOR BAHRU

1. Faculty of Civil Engineering
2. Faculty of Mechanical Engineering
3. Faculty of Electrical Engineering
4. Faculty of Chemical and Energy Engineering
5. Faculty of Computing
6. Faculty of Science
7. Faculty of Built Environment and Surveying
8. Faculty of Social Sciences and Humanities
9. Faculty of Management

3 UTM KUALA LUMPUR

1. Razak Faculty of Technology and Informatics
2. Malaysia-Japan International Institute of Technology (MJIIT)
3. Azman Hashim International Business School (AHIBS)

UTM in Numbers

Enrolment (MyMOHES)

24,780 Undergraduate & Postgraduate Students

3,532 Master Students

4,824 PhD Students

4,987 International Students

Staff

4,819 All Staff

1,578 Academician

1,439 Academician with PhD

3,241 Professional and Support Staff

Alumni

203,146 Alumni

9,342 International Alumni

87 Countries

99 % Graduate Employability
(Data as of July 2023)

Campus Experience

27,207 Outbound Mobility Students
(since 2009)

17,030 Inbound Mobility Students
(since 2009)

16,139 Students involved in Entrepreneurship Activities

4,125 Students Involved in Job on Campus Programme
(since 2016)

27,420 Students Involved in Service-Learning Programme

312 Students involved in 5 Excellence Track Programme
(since 2011)

*Data as of June 2023

# Distribution of publications across different Sustainable Development Goals (SDGs) in UTM

The research publications related to the Sustainable Development Goals (SDGs) reveals significant disparities in focus across the 17 goals, highlighting areas of both robust academic interest and notable neglect. According to the data in 2023, Decent Work and Economic Growth (SDG 8) leads with 145 publications, indicating a strong emphasis on economic issues and employment strategies, which aligns with global priorities for sustainable economic development.

Following this, Clean Water and Sanitation (SDG 6) has 106 publications, reflecting the critical importance of water quality and sanitation in promoting public health and environmental sustainability. Other goals receiving considerable attention include Good Health and Well-being (SDG 3) with 78 publications and Industry, Innovation, and Infrastructure (SDG 9) with 97 publications, suggesting a robust interest in healthcare advancements and technological innovation. However, several SDGs are underrepresented in research output; for instance, No Poverty (SDG 1) has only 3 publications, indicating a significant gap in research that could inform policies aimed at poverty eradication.

Similarly, Gender Equality (SDG 5) and Peace, Justice, and Strong Institutions (SDG 16) each have only 4 publications, raising concerns about the adequacy of research addressing gender issues and institutional integrity. The goal of Zero Hunger (SDG 2) has only 18 publications, which suggests that food security and agricultural sustainability need more scholarly attention.
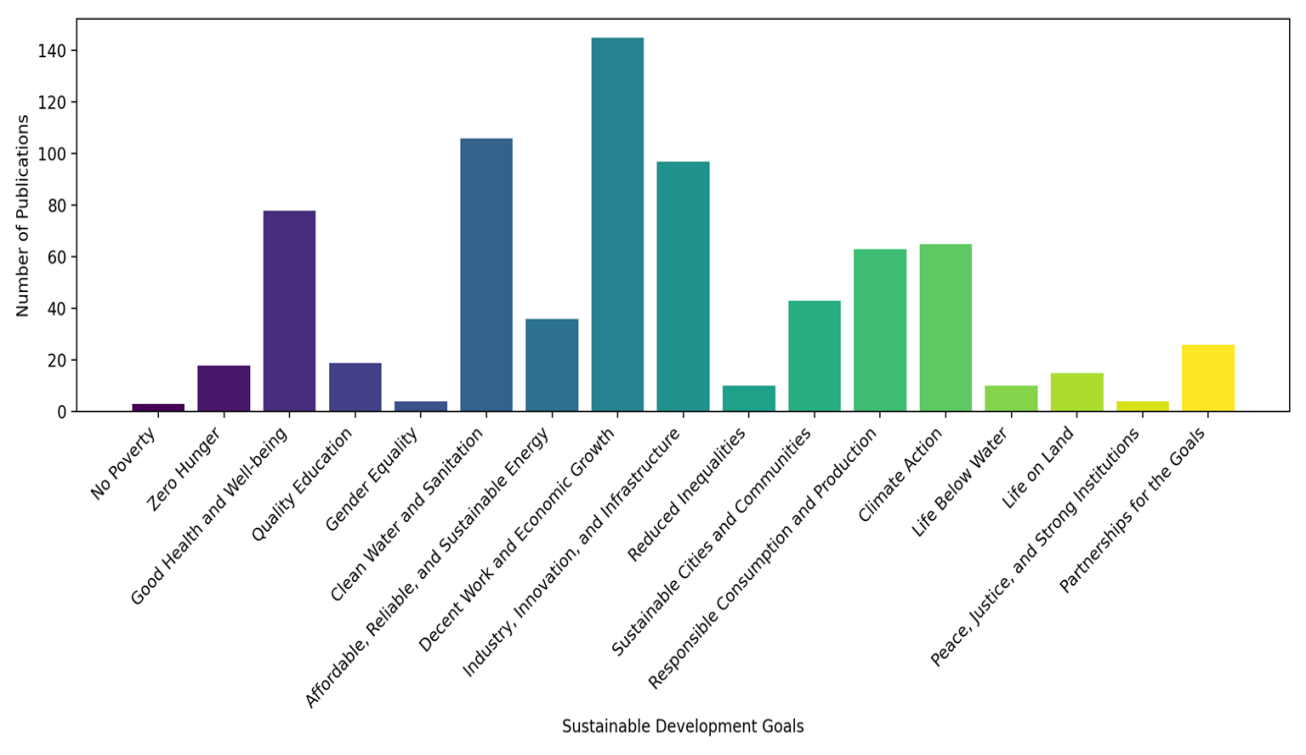
UTM SUSTAINABLE CAMPUS BLUEPRINT 2030

In ensuring governance of the sustainability agenda, UTM has produced a Sustainable Campus Blueprint 2030 in December 2022. The blueprint acts as a guide for all stakeholders inside and outside UTM to move forward for the sustainability agenda. It covers six (6) Strategic Priority Areas (SPA) that become the key focus areas for the agenda of sustainability. The full description of the SPA is available in the document of UTM Sustainable Campus Blueprint 2030.

Creation of the blueprint is based on the global, national, and institutional policies on sustainability

Global Framework: United Nations' Sustainable Development Goals 2015-2030

The United Nations' Sustainable Development Goals (SDG) 2015-2030 becomes the world's framework for sustainable development. Nations around the globe have adopted SDG at the national level including Malaysia. Universities also have adopted SDG as the framework for sustainability.

In relation to UTM Sustainable Campus Blueprint 2030, SDG becomes the prime guide for the creation of the campus blueprint. Some SDGs are specifically adopted that are relevant to the university. For instance, SDGs #12 (Responsible Consumption) and SDG #17 (Partnerships for the Goals) are two examples of SDGs that are pertinent to the campus sustainability blueprint.

The Key National Framework: Environment Sustainability in Malaysia 2020-2030

In the national context, the Ministry of Natural Resources, Environment and Climate Change (*Kementerian Sumber Asli, Alam Sekitar dan Perubahan Iklim*) has released the framework of Environment Sustainability in Malaysia 2020-2030 (Ministry of Natural Resources, Environment and Climate Change, 2020). The national blueprint covers four thrusts:

(1) empowered governance
(2) green growth
(3) strategic collaboration
(4) social inclusiveness covering

Institutional Framework: enVision UTM 2025

EnVision UTM 2025 is UTM's strategic plan for 2021-2025 periods. It is the current plan of UTM that serves as the institutional framework for achieving the vision and mission of the university. It comprises five (5) Strategic Thrusts and eight (8) Strategic Priorities. Besides, enVision UTM 2025 includes four (4) core values that also cover Sustainability.

One of the Strategic Priorities is S6: Provide Sustainable Campus Experience to UTM's students, staff, and surrounding communities. The sixth strategic priority is under the fourth strategic thrust which is ST4: Transformative Life Experiences through Knowledge Empowerment and Trust. ST4 and S6 both are critical for the agenda of Sustainability.

Other National Framework: Occupational Safety and and Health Master Plan (OSHMP) 2021-2025

OSHMP 2021-2025 consists of seven (7) strategies (DOSH, 2021). Strategy #4 which is Empowering Occupational Health and Strategy is specifically relevant to one of the core agendas of Sustainability, which is Health.
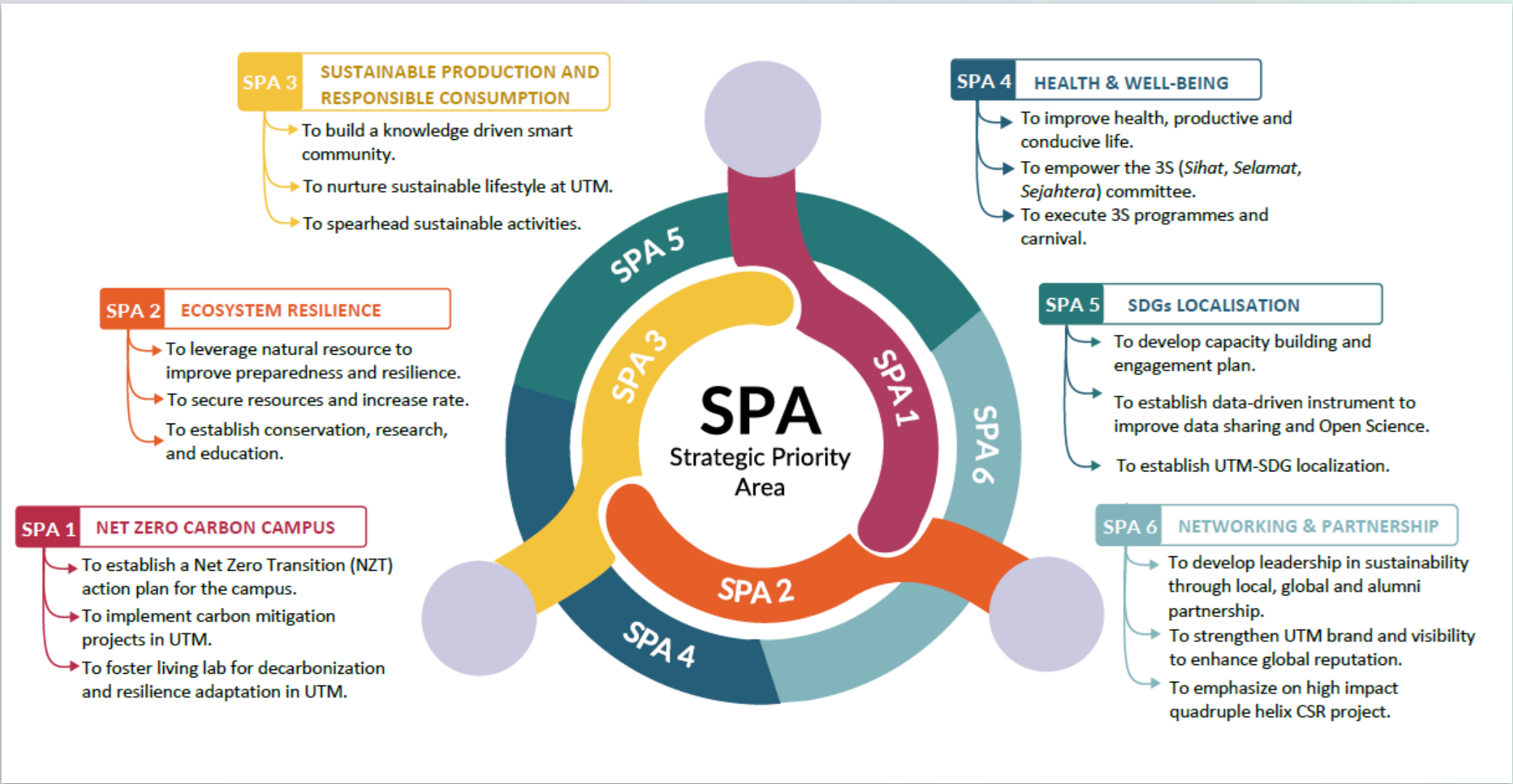
UTM's Sustainability Blueprint:
A Roadmap for Action

The UTM Sustainability Blueprint, launched in 2023, is a comprehensive roadmap for the university's sustainability journey. It outlines strategic initiatives, objectives, and action plans to achieve UTM's sustainability vision

UTM's Sustainability Blueprint: Strategic Priority Action (SPA)

SPA #1: Net Zero Carbon Campus

SPA #1 is developed based on one of the SDG, which is SDG #11: Sustainable Cities and Communities and the Initiative #27: Low Carbon Cities in the national framework of Environment Sustainability in Malaysia 2020-2030. At the institutional level, SPA #1 aligns with SP3, S6, and S7 of the enVision UTM 2025.

SPA #1 to achieve three objectives:
1. To establish Net-Zero Transition (NZT) action plan for the campus
2. To implement carbon mitigation projects in UTM
3. To foster living lab for decarbonization and resilience adaptation in UTM

SPA #2: Ecosystem Resilience

SPA #2 is developed from the inputs available in the SDG such as SDG #16: Peace, Justice, and Strong Institutions and in the Environment Sustainability in Malaysia 2020-2030, specifically the Initiative #4: Strengthening Environmental Governance in Malaysia and in OSHMP 2021-2025 for Strategy #2: Reinforcing Self-Regulation Practice (of Occupational Safety and Health) in the Workplace. At the institutional level (enVision UTM 2025), relevant elements are ST4, S6 and S7.

SPA #2 to achieve three objectives:
1. To leverage natural resource to improve preparedness and resilience
2. To secure resource and increase rate
3. To establish conservation, research, and education

SPA#3: Sustainable Production and Responsible Consumption

SPA#3 is set based on SDG #12: Responsible Consumption and Production and on the national blueprint of Environment Sustainability in Malaysia 2020-2030, such as the Initiative #28: Low Carbon Mobility and Initiative #31: Establishment of Waste to Wealth Facilities. SPA #3 also aligns with enVision UTM 2025, especially ST4, S6 and S7.

SPA #3 to achieve three objectives:
1. To build a knowledge driven smart community
2. To nurture sustainable lifestyle
3. To spearhead sustainable activities

SPA#4: Health and Well-being

SPA #4 is created based on SDG #3: Good Health and Well-being and the national blueprint on OSHMP 2021-2025, specifically Strategy #4: Empowering Occupational Health. At the campus level, enVision UTM 2025 has elements that shows the elements of SPA #4, such as SP3, SP4, S3 and S6.

SPA #4 is meant to achieve three objectives:
1. To improve heath, productive, and conducive campus life
2. To empower the 3S: *Sihat, Selamat & Sejahtera* Committee
3. To execute 3S programmes and carnivals

SPA#6: Networking and Partnership

SPA #6 is set based on SDG #17: Partnerships for the Goals. At the national level, Environment Sustainability in Malaysia 2020-2030 sets the Strategic Collaboration as one of four thrusts. Besides, OSHMP 2021-2025 uses the theme of "Inclusive OSH - Togetherness and Commitment". At the institutional level, enVision UTM 2025 puts "Synergy" as one of the core values of the university. Besides, ST3, ST4 and ST5 in the enVision UTM 2025 indicate the elements of SPA#6.

SPA #6 aims to attain three objectives:
1. To develop leadership in Sustainability through local, global and alumni partnership
2. To strengthen UTM brand and visibility to enhance global reputation
3. To emphasize on high impact quadruple helix of CSR (Corporate Social Responsibility) project

SPA#5: SDGs Localisation

Localising SDGs means implementing the global SDGs to the national and institutional levels. National and institutional frameworks and blueprints in Malaysia have adopted the global SDG set by the United Nation (2015). For instance, Environment Sustainability in Malaysia 2020-2030 has some initiatives that align with SDGs, such as Initiative #1: Clean Rivers that aligns with SDG #6: Clean Water and Sanitation. At the institutional level, enVision UTM 2025 sets the notion of Sustainability as one of the core values of the university and has elements that show commitment to SPA #5, which are ST1, ST3, ST4 and ST5.

SPA #5 aims to achieve three objectives:
1. To develop capacity building and engagement plan
2. To establish data-driven instrument and mechanisms to improve data sharing and Open Science
3. To establish UTM-SDG localisation

The shared space

Floor space

807 Total number of buildings

1,127,900 m²

Collaborative space

1 Institute for lifelong learning

37 Active spin-off companies

Recreational space

4.1km Pioneer's trail

6.0km Inventor's trail

3.0km Thinker'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

Data valid as at January 2023

3

SUSTAINABILITY ENHANCEMENT ON SDG

SDG 1: No Poverty – UTM's Strategic Approach

SDG 1: No Poverty aims to end poverty in all its forms everywhere by 2030. UTM's approach to this goal is multifaceted, recognizing that poverty is not only about income but also includes a lack of access to basic services, education, healthcare, and opportunities for social and economic mobility. UTM has implemented various initiatives that address these aspects of poverty both within the university community and in the broader society.

Strategic Objectives:

- **Enhancing Access to Education:** UTM is committed to making quality education accessible to all, particularly those from disadvantaged backgrounds, recognizing that education is a key driver in breaking the cycle of poverty.

- **Community Outreach and Support Programs:** UTM actively engages with local communities to support poverty alleviation efforts through targeted outreach programs.

- **Research and Innovation:** UTM fosters research and innovation aimed at developing sustainable solutions to poverty-related challenges, such as affordable housing, clean water access, and economic empowerment.

Proportion of Students Receiving Financial Aid Due to Poverty

Approximately 9.47% of UTM's student population receives financial aid due to low-income status, demonstrating the institution's support for students facing financial challenges. This proportion underscores UTM's commitment to enhancing educational accessibility, reducing financial barriers, and fostering an inclusive environment where economically disadvantaged students have the opportunity to pursue higher education. By offering financial aid to nearly 10% of its students based on economic need, UTM aligns with Sustainable Development Goals related to reducing inequalities and promoting inclusive access to quality education.

Distribution of Students by Financial Aid Status

2,500 Low-Income Students Receiving Financial Aid
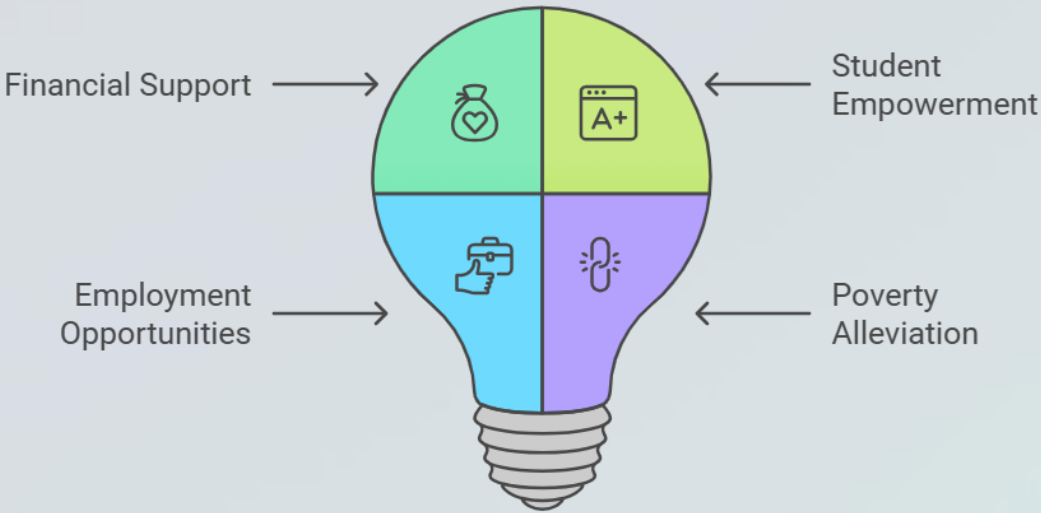
23,883 Other Students
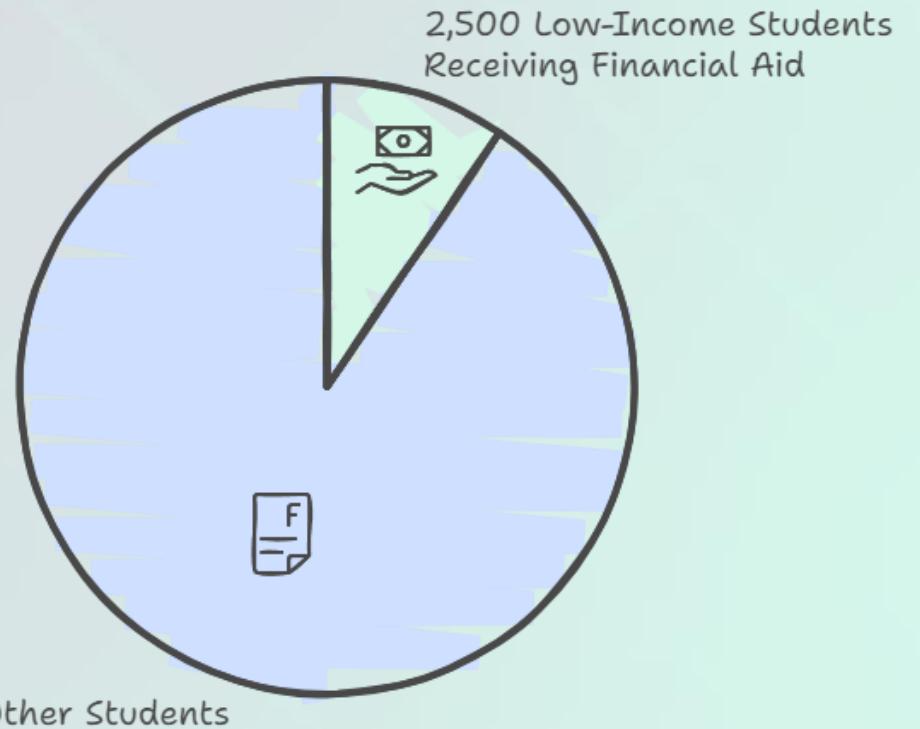
Tuition Fee Assistance and Poverty

Tuition Fee Assistance

UTMKL plays a vital role in combating poverty through its tuition fee assistance program, which has allocated RM 255,000.00 to support 170 students. This initiative directly addresses one of the primary barriers to education—financial constraints—ensuring that students can pursue higher education without the burden of tuition fees. By empowering students with knowledge and skills, UTMKL helps them secure better employment opportunities, thereby enabling them and their families to break free from the cycle of poverty.

Living Expenses Assistance

In addition to tuition support, UTMKL offers a Living Expenses Assistance program, which has allocated RM 140,000.00 to assist 140 students. This program is crucial for meeting students' basic needs, including food, housing, and transportation. By alleviating financial stress, the assistance allows students to concentrate on their studies, thereby enhancing their academic performance and overall well-being. This stability is essential for their personal development and long-term success.

UTMKL's Impact on Poverty Alleviation

Financial Support

Student Empowerment

Employment Opportunities

Poverty Alleviation

Components of Living Expenses Assistance

Financial Allocation

Student Support

Basic Needs Coverage

Academic Focus

Personal Development
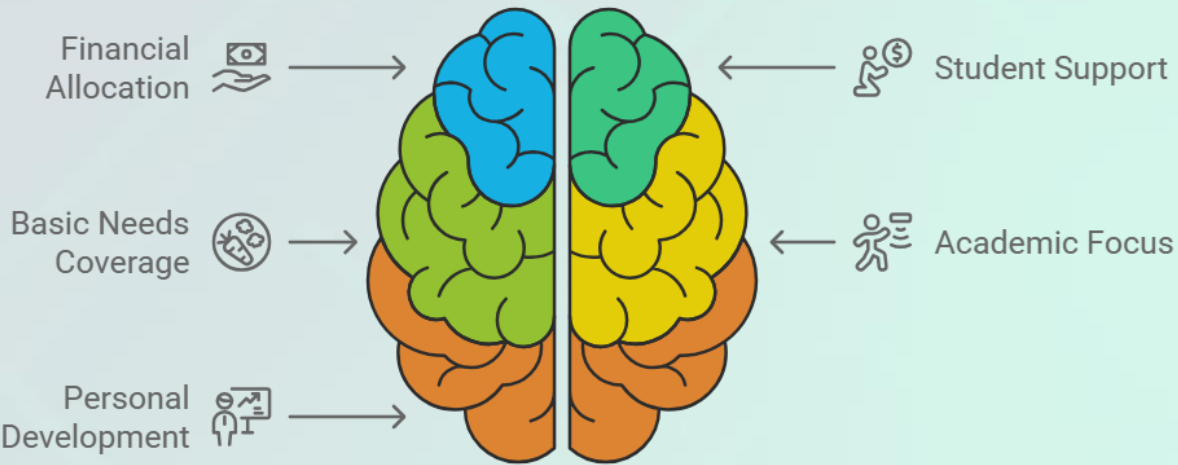
2

ZERO
HUNGER

UTM's Strategic Approach to SDG 2

UTM's approach to SDG 2 is rooted in the understanding that food security and sustainable agriculture are critical to the well-being of individuals and communities, as well as to the broader ecological health of the planet. The university's strategy encompasses education, research, community engagement, and policy advocacy, all aimed at creating resilient food systems and reducing hunger both locally and globally.

Strategic Objectives:

- **Education and Capacity Building:** Enhancing knowledge and skills in sustainable agriculture, food security, and nutrition through academic programs and community outreach.

- **Research and Innovation:** Developing innovative agricultural technologies and practices that contribute to food security and sustainability.

- **Community-Based Initiatives:** Implementing programs that address local food insecurity and promote sustainable agriculture practices within communities.

- **Policy Advocacy and Partnerships:** Collaborating with government bodies, NGOs, and international organizations to influence policies and practices related to food security and sustainable agriculture.

Categories

Total Graduates — 5872

Agriculture and
Aquaculture Graduates — 65

Number of
Graduates

Graduate Statistics
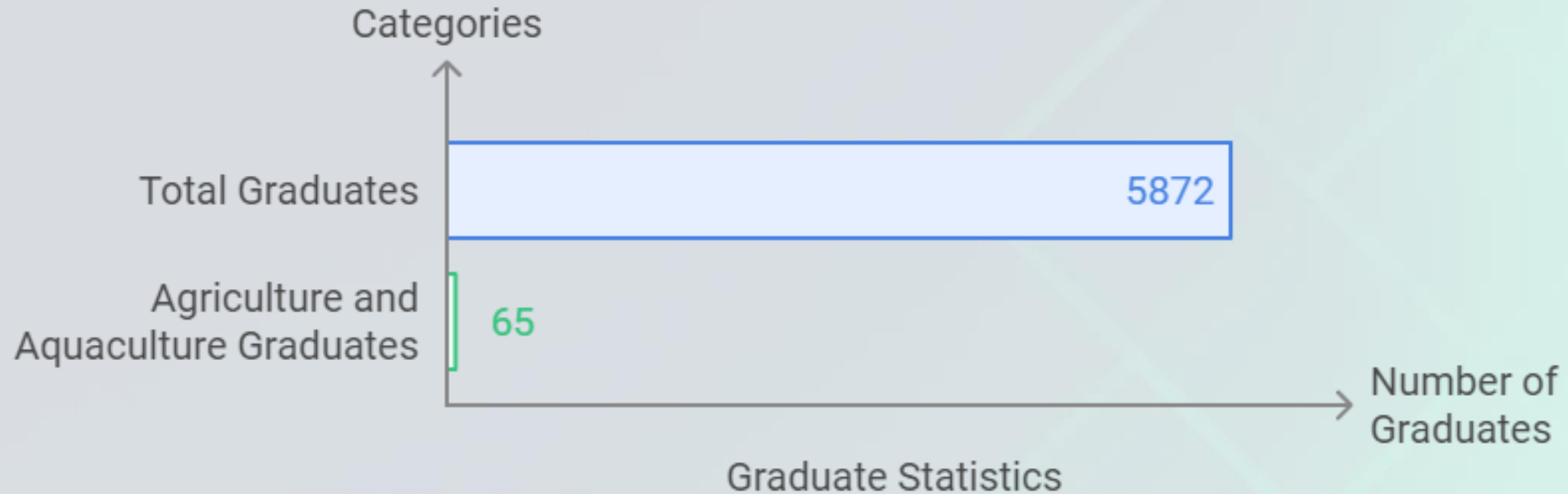
UTM's focus on sustainability within agriculture and aquaculture courses ensures that graduates are well-prepared to implement eco-friendly practices, advance sustainable food production, and innovate within Malaysia's agricultural sector. Through comprehensive programs that incorporate the latest sustainable technologies and practices, UTM's graduates are positioned to contribute to reducing food insecurity and environmental degradation. This approach aligns UTM's mission with SDG 2 by nurturing a workforce dedicated to promoting sustainable agriculture. By cultivating expertise in sustainable agriculture, UTM is actively contributing to Malaysia's long-term food security goals, supporting resilient agricultural practices, and fostering a generation of leaders who are committed to sustainable development in the region.

UTM always put a priority to their student's wellbeing. Despite various scholarships, living allowances and subsidies, UTM have organised a large scale of event just to combat hunger among our students and citizen synergizing the SDG 2 to aim for Zero Hunger. In 2023, we have organized quite a number of events such as "Dapur KTHO", "Menu Rahmah" for B40 students, "Majlis Tautah Ukhwah Syawal" for UTM community , "Program Kembara Korban 1001" for Asnaf,. Nevertheless, some of the UTM food court accept the "pay it forward meals" is gaining popular in UTM as part of charity to provide free foods to the needy students. Most of the donations are from the lecturers and staff of UTM. These unsung should not be forgotten in their contribution to a zero-hunger agenda.

In promoting food security and improved nutrition and promote sustainable agriculture AHIBS with the initiative from spinover company by Dr Khairuddin has introduced Bee Modular Box in the farming stingless bee honey or "Madu Kelulut". Various project has been done with grants from various organization to establish the madu kelulut farming. Among the project in 2023 are, Moden Bee Modular Waqaf An-Nur-Utm (Waqaf An-Nur Agropark, Utm, Skudai), Simpang Renggam, Gunung Lambak, UTM-Angkasa, Tahfiz Al-Kitab Some of our collaborator in the bee-modular projects are, ANGKASA Malaysia, KOOBEEJB, Koperasi Eco Usahawan Johor Berhad, Zakat Johor, MAIJ, PPNJ, Koperasi Eco Usahawan Johor Berhad, MOSTI, YIM, Penjara Simpang Renggam, SKM, Tahfiz Al-Kitab, and recently JAKOA as our synergy partner in indigenous community projects.

UTM promoting food security and improved nutrition and promote sustainable agriculture AHIBS with Bee Modular Box – Kelulut Farming

UTM'S COMMITMENT TO STUDENT WELFARE IN 2023

The "Dashboard Bantuan UTMCare 2023" outlines the financial assistance programs offered by the University of Technology Malaysia (UTM) to support students facing economic challenges, with a total of 4,189 recipients benefiting from various forms of aid, including living expenses and tuition fee assistance. Key initiatives include Zakat for living expenses, which provided aid to 655 students in the first semester, and targeted support for 840 Indian students. Additionally, emergency assistance was extended to 157 students affected by natural disasters, while a monthly food allowance of RM450 was allocated to help ensure food security. These efforts align with Sustainable Development Goal 2 (SDG 2), which aims to end hunger and promote food security, demonstrating UTM's commitment to fostering an environment where all students can thrive academically without the burden of financial stress.

DASHBOARD BANTUAN UTM CARE

TAHUN: 2023 (1)

Seksyen Kemudahan, Kebajikan dan Tatatertib Jabatan Timbalan Naib Canselor (Hal Ehwal Pelajar & Alumni) 81310 UTM Johor Bahru . Email: bkkthep@utm.my . Tel : 07-5530185 / 07-5530683 / 07-5530513

BANTUAN 4,189
PROGRAM 28
PENERIMA 2,500
NILAI BANTUAN (RM)

	BANTUAN	TAHUN	BILANGAN
1.	Bantuan Zakat Sara Diri Sem I 2023/2024 Fasa 1	2023	655
2.	Bantuan Zakat Sara Diri Sem II 2022/2023 Fasa 1	2023	651
3.	Bantuan Zakat Sara Diri Sem I 2023/2024 Fasa 2	2023	470
4.	Bantuan Zakat Sara Diri Sem II 2022/2023 Fasa 3	2023	345
5.	Subsidi Bantuan Pengajian Ijazah Sarjana Muda Bagi Pelajar India B40 (...	2023	251
6.	Bantuan Zakat Yuran Pengajian Sem I 2023/2024 Fasa 2	2023	230
7.	Bantuan Zakat Yuran Pengajian Sem II 2022/2023 Fasa 1	2023	199
8.	Bantuan Zakat Yuran Pengajian Sem II 2022/2023 Fasa 2	2023	174
9.	Bantuan Banjir 2023 (RM500)	2023	157
10.	Bantuan Makan Endowmen RM450.00/bulan Fasa 2	2023	150
11.	Perantisiswa Keluarga Malaysia	2023	110
12.	Bantuan Zakat Sara Diri Sem II 2022/2023 Fasa 2	2023	101
13.	Bantuan Zakat Yuran Pengajian Sem I 2023/2024 Fasa 1	2023	100
14.	Bantuan Awal Pengajian (BAP) 2023 Yayasan Bank Rakyat (RM1,000)	2023	100
15.	Bantuan Zakat Sara Diri Sem II 2022/2023 Fasa 4	2023	99
16.	Bantuan Zakat Yuran Pengajian Sem II 2022/2023 Fasa 3	2023	91
17.	Bantuan Zakat Latihan Industri Sem II 2022/2023 Fasa 1	2023	91
18.	Sumbangan Bantuan Makanan Bidari Kekal Sdn. Bhd. Bacth 1	2023	45
19.	Bantuan Zakat Yuran Pengajian Sem II 2022/2023 Fasa 4	2023	38
20.	Sumbangan Bantuan Makanan Bidari Kekal Sdn. Bhd. Bacth 2	2023	32
		Grand total	4,189

Chart 1 (KRP):
- KRP: 327
- KTF: 276
- KDSE: 250
- KTC: 214
- K9K10: 206
- KTHO: 196
- KTDI: 190
- KDOJ: 99
- KTR: 94
- KP: 70
- LUAR KAMPUS: 59

KRP RM: 327

Chart 2:
- FSSK: 613
- FABU: 314
- FS: 357
- FKM: 187
- FKE: 141
- FKT: 141
- FKA: 133
- FM: 90
- FC: 69
- MJIIT: 22
- 16
- SPACE: 9
- FAI: 5

3

GOOD HEALTH & WELL-BEING

**UTM's Strategic Approach to SDG 3**

UTM's approach to SDG 3 is centered on the belief that promoting health and well-being is essential for the overall development and prosperity of individuals and communities. The university has adopted a comprehensive strategy that includes enhancing access to healthcare services, fostering research and innovation in health-related fields, and actively engaging in community health initiatives. In 2024, UTM focuses on implementing the first phase of the UTM Sustainability Blueprint 2030, driving 26 strategic initiatives aimed at enhancing well-being through sustainable practices aligned with Planetary Health and ESG principles

Strategic Objectives:

- **Healthcare Access and Support:** Providing accessible and affordable healthcare services to students, staff, and the surrounding community.

- **Health Education and Awareness:** Promoting health education and awareness through academic programs, workshops, and campaigns.

- **Research and Innovation in Health Sciences:** Encouraging research in public health, medical technology, and disease prevention to address pressing health challenges.

- **Community Health Outreach:** Engaging with local communities to support public health initiatives and improve overall well-being.

Aligned with Sustainable Development Goal 3 (SDG 3), which promotes good health and well-being, Universiti Teknologi Malaysia (UTM) plays a critical role in nurturing skilled professionals dedicated to improving health outcomes. In 2023, of UTM's 5,872 graduates, 47 earned degrees in health-related fields, representing approximately 0.8% of the graduating class. This proportion underscores UTM's commitment to preparing graduates who can contribute to Malaysia's healthcare sector, addressing challenges in public health and enhancing community wellness.

Despite a smaller percentage in health professions, UTM's emphasis on quality education ensures that these graduates are equipped with essential skills in preventive health, healthcare management, and community wellness. UTM's healthcare programs incorporate interdisciplinary learning, blending technology and medical knowledge to meet the evolving needs of modern healthcare. By fostering talent in health professions, UTM contributes to Malaysia's healthcare workforce, supporting SDG 3's targets for improved healthcare access, disease prevention, and health equity. This focused training prepares graduates to play pivotal roles in public health initiatives, supporting UTM's broader mission to enhance well-being and sustainable development within the Malaysian health sector.

Distribution of Graduates
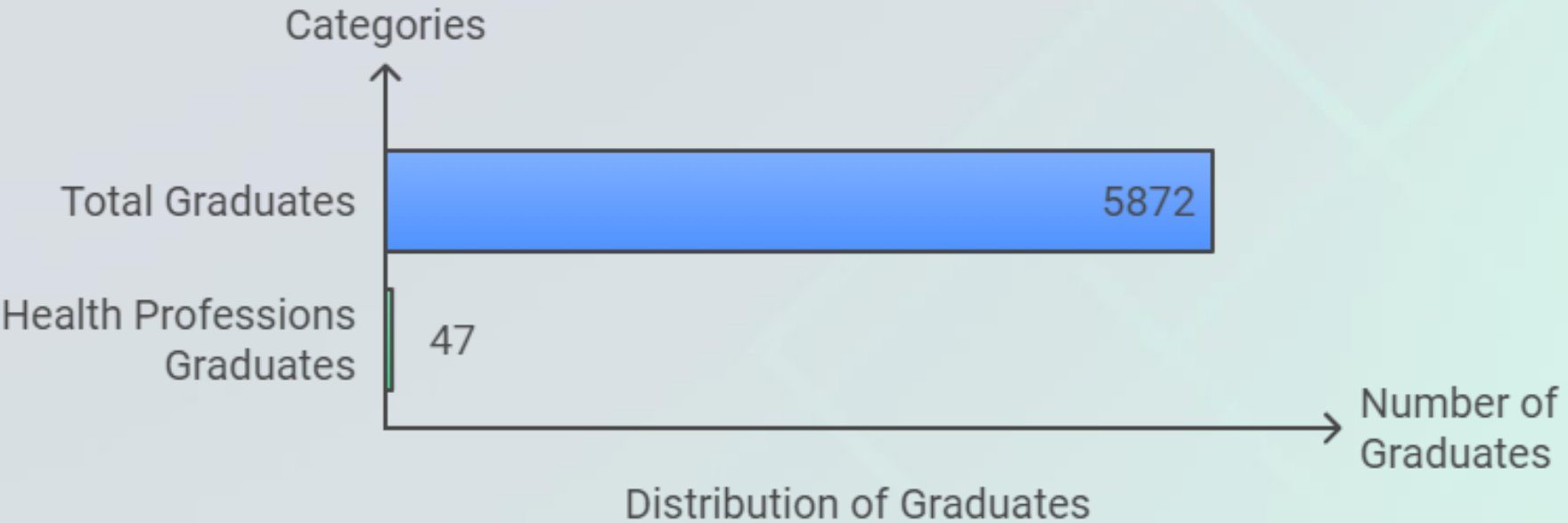
Universiti Teknologi Malaysia (UTM) has undertaken several key initiatives and programs in 2023 that align with Sustainable Development Goal 3 (SDG 3), which focuses on ensuring healthy lives and promoting well-being for all at all ages.

Health and Wellness Initiatives

1. Anaquin Skin Care Product: UTM developed 'Anaquin,' a skin care product made from pineapple extract using eco-friendly sub-critical water extraction. This product offers antioxidant, anti-aging, and anti-inflammatory benefits, promoting healthier skin and overall well-being.
2. Mental Health Awareness Month: Save One Soul 2023 (SOS'23): This program aimed to raise awareness about mental health issues within the UTM community. It featured workshops, talks, and forums on mental wellness, self-care, and reducing stigma around mental health.
3. International University Social Responsibility Program: In collaboration with Universitas Airlangga, this program included community gardening and health education activities focused on dengue prevention, child nutrition, dental hygiene, and sustainable living. It aimed to promote health awareness and strengthen community ties.

Community Engagement Programs

1. School Disaster Preparedness Program: Conducted at SK Jeram Batu, this program trained students in disaster response through simulations and games to build resilience and essential survival skills.
2. Kembara Korban 1001 Asnaf: UTM partnered with Yayasan Budi Ihsan Malaysia to distribute sacrificial meat to underprivileged students and staff, addressing food security and fostering community solidarity.
3. Soap-Making Program: This initiative taught the Tampoi community to produce eco-friendly soap from used cooking oil, promoting entrepreneurship and environmental sustainability.

Safety and Preparedness Programs

1. Fire Drill Program at Kolej Tun Hussein Onn (KTHO): This program enhanced students' preparedness for emergencies by simulating fire scenarios and educating participants on fire safety techniques.
2. OSH Day Celebration: Focused on workplace safety and health, this event included educational programs and exhibitions to foster a culture of safety awareness among staff, students, and the community.

Student Welfare Programs

1. Projek Rumah Sejahtera: Provided a new home for the family of a student through donations, enhancing their living conditions and alleviating financial stress.
2. Free Meal Distribution During Ramadan: Aimed at alleviating financial burdens on students by providing meals during Ramadan, supporting the SDGs of "No Poverty" and "Zero Hunger."

Enhancing Health Services and Accessibility at UTM

Universiti Teknologi Malaysia (UTM) highlight efforts that align with Sustainable Development Goal 3 (SDG 3), which aims to ensure healthy lives and promote well-being for all ages. First figure presents a directory for the University Health Center at UTM Kuala Lumpur, providing essential contact information for various health services such as emergency lines, registration counters, pharmacy units, and laboratories. This accessibility to health services supports SDG 3 by promoting universal health coverage and ensuring that students and staff have access to necessary medical care. The second figure outlines procedures for using a wheelchair, emphasizing safety and proper handling. This reflects a commitment to inclusive health practices and the well-being of individuals with mobility challenges. By ensuring that facilities are accessible and that equipment is properly maintained, UTM contributes to reducing health inequalities and improving the quality of life for all its community members. Together, these initiatives demonstrate UTM's dedication to fostering a supportive and healthy environment, thereby contributing to the broader goals of SDG 3 by enhancing access to healthcare services and promoting inclusivity in health care provisions.

4

QUALITY EDUCATION

4 QUALITY EDUCATION

QUALITY
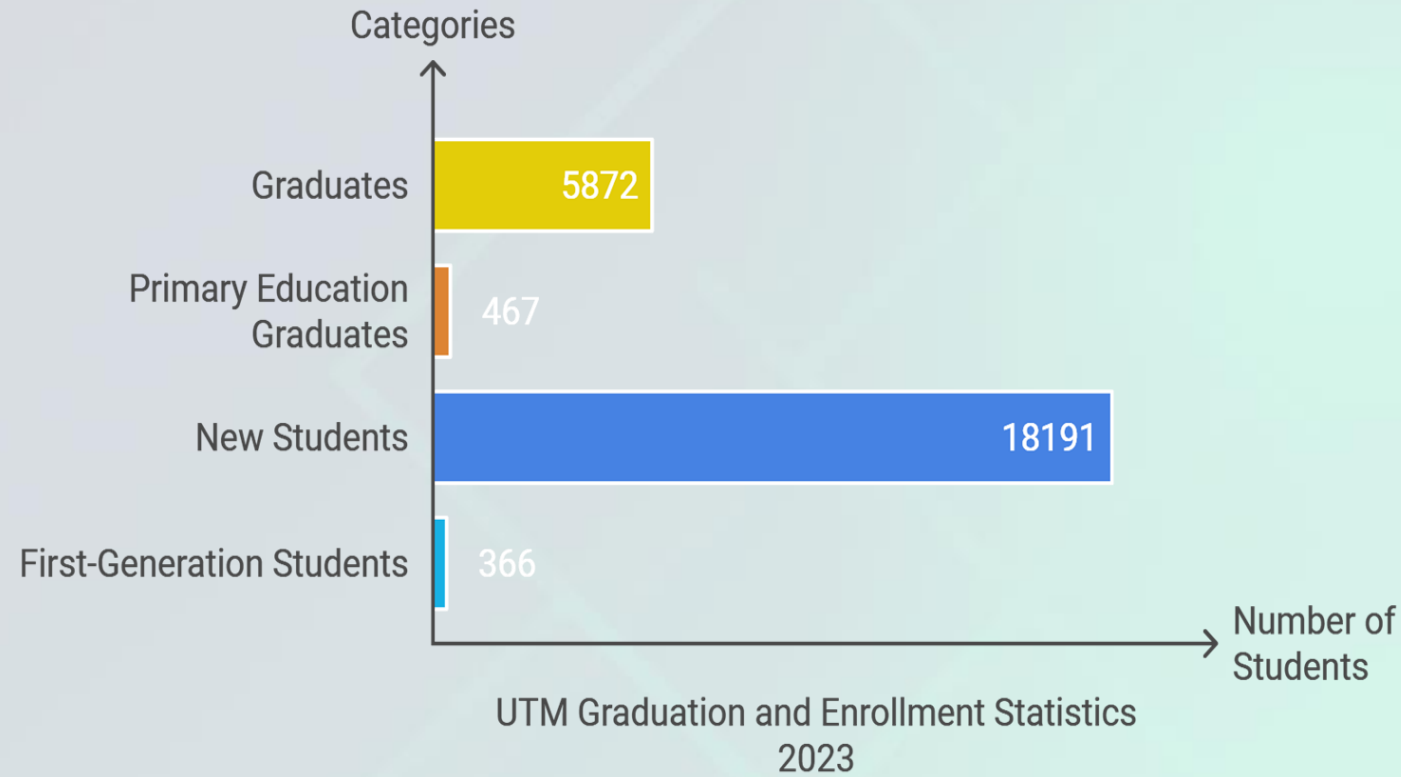EDUCATION

UTM's Strategic Approach to SDG 4

UTM's approach to SDG 4 is founded on the belief that education is fundamental to individual and societal progress. The university aims to provide high-quality education that is accessible to all, promotes critical thinking, fosters creativity, and prepares students for the challenges of the 21st century. UTM's strategy encompasses curriculum development, educational research, inclusive practices, and outreach programs designed to extend the benefits of education beyond the campus.

Strategic Objectives:

- **Enhancing Curriculum and Pedagogy:** Continuously improving the quality and relevance of academic programs to meet the evolving needs of students and society.

- **Promoting Lifelong Learning:** Expanding opportunities for lifelong learning through flexible and accessible educational programs, including online and continuing education courses.

- **Fostering Inclusivity and Equity:** Ensuring that education at UTM is inclusive and equitable, with a focus on supporting marginalized and underrepresented groups.

- **Extending Educational Outreach:** Engaging with local and global communities to share knowledge and resources, and to promote education as a tool for sustainable development.
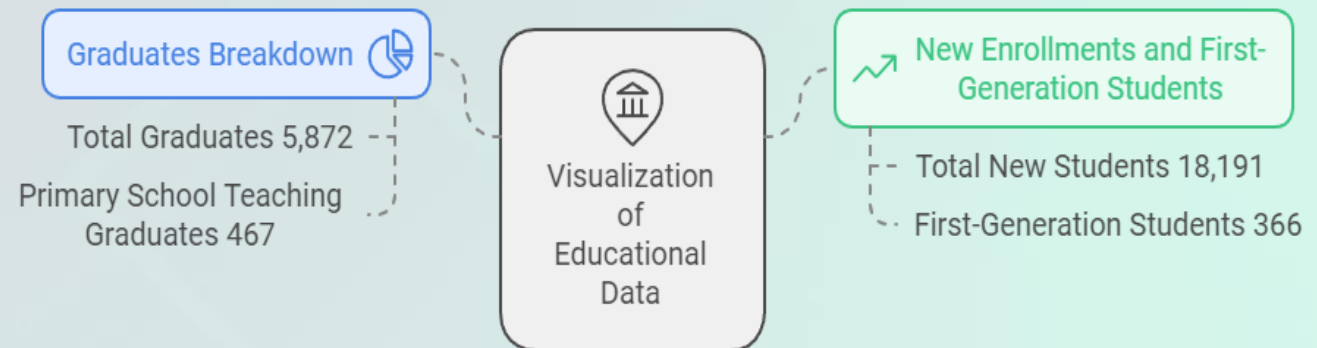
Graduation Statistics

In 2023, UTM celebrated the graduation of **5,872 students**, showcasing its growing influence in contributing to Malaysia's skilled workforce. Among these graduates, **467** earned qualifications specifically tailored for primary education, equipping them with the necessary skills to become educators at the foundational school level. This significant number underscores UTM's dedication to fostering quality education in alignment with **Sustainable Development Goal 4 (SDG 4)**, which emphasizes inclusive and equitable education and lifelong learning opportunities. By training graduates with the expertise to teach at the primary level, UTM addresses educational demands and ensures that young students receive foundational knowledge from qualified teachers.

Enrolment Statistics

UTM welcomed a substantial intake of **18,191 new students** starting their undergraduate degrees. This robust enrolment demonstrates UTM's appeal as an educational institution and its vital role in supporting Malaysia's higher education landscape. Among these newcomers, **366** were first-generation students, marking a meaningful achievement in the university's commitment to educational accessibility. First-generation students, often the first in their families to pursue higher education, represent a critical demographic as they pave the way for academic advancement within their families and communities. UTM's support for these students exemplifies its mission to bridge educational gaps and create more equitable opportunities for students from diverse backgrounds.

Categories

Graduates 5872

Primary Education Graduates 467

New Students 18191

First-Generation Students 366

Number of Students

UTM Graduation and Enrollment Statistics 2023

Graduates Breakdown

Total Graduates 5,872

Primary School Teaching Graduates 467

Visualization of Educational Data

New Enrollments and First-Generation Students

Total New Students 18,191

First-Generation Students 366

Empowering quality education through AI, UTM's commitment to SDG 4 builds a future-ready Malaysia.

Universiti Teknologi Malaysia (UTM) has taken significant strides toward advancing Sustainable Development Goal 4 (SDG 4), which focuses on inclusive and equitable quality education. UTM has demonstrated its commitment to building a future-ready Malaysia by pioneering advancements in artificial intelligence (AI) education through collaborative efforts and institutionalizing frameworks that empower learners and educators. The pivotal gathering hosted by Future Tech Innovation Research (FTIR) on November 2, 2023, served as a key milestone in this journey.

Led by Assoc. Prof. Dr. Aini Suzana Arifin, UTM's Project Leader, the meeting brought together influential stakeholders, including the Ministry of Science, Technology and Innovation (MOSTI), Malaysia Digital Economy Corporation (MDEC), Standard & Industrial Research Institute of Malaysia (SIRIM), and the Malaysian Communications and Multimedia Commission (MCMC). This gathering underscored the role of educational institutions like UTM in fostering AI literacy, upskilling, and creating a policy environment that aligns with ethical AI practices. The discussions, which included UTM's AI experts Dr. Syahid and Dr. Azizul, revolved around developing a governance framework and a comprehensive AI policy, ensuring the responsible and ethical use of AI technology across industries and educational sectors.

These initiatives align closely with SDG 4 by promoting quality education that equips students and professionals with critical skills in a rapidly evolving technological landscape.

Malaysia's first dedicated AI faculty, launched at Universiti Teknologi Malaysia (UTM), marks a pivotal step in advancing AI education and research in the nation. This innovative faculty focuses on developing AI talent and fostering ethical AI practices, aiming to align with Sustainable Development Goals, particularly SDG 4 for quality education.

Through specialized AI programs, industry partnerships, and a curriculum that emphasizes responsible AI, the faculty prepares students for Malaysia's rapidly evolving digital landscape. Infographics showcase the faculty's core programs, research focus areas, partnerships, and anticipated contributions to Malaysia's AI-driven economy, positioning it as a leader in AI education in Southeast Asia.

Key Initiatives and Programs in 2023

Digital Learning Platforms

The university expanded its use of digital learning platforms, incorporating advanced technologies such as artificial intelligence and virtual reality to enhance the learning experience. These platforms offer students greater flexibility and access to a wide range of resources.Through the enVision UTM 2022-2025 strategy, UTM has planned the development of its curriculum to be in line with the current educational changes in the world. Although for the time being there has not been any decision from the Professional Body to allow the curriculum as a whole to be made according to flexible and flexible methods, but UTM has created a New Model Curriculum Framework for Future-Oriented Graduates to meet the wishes of UTM HyFlex.
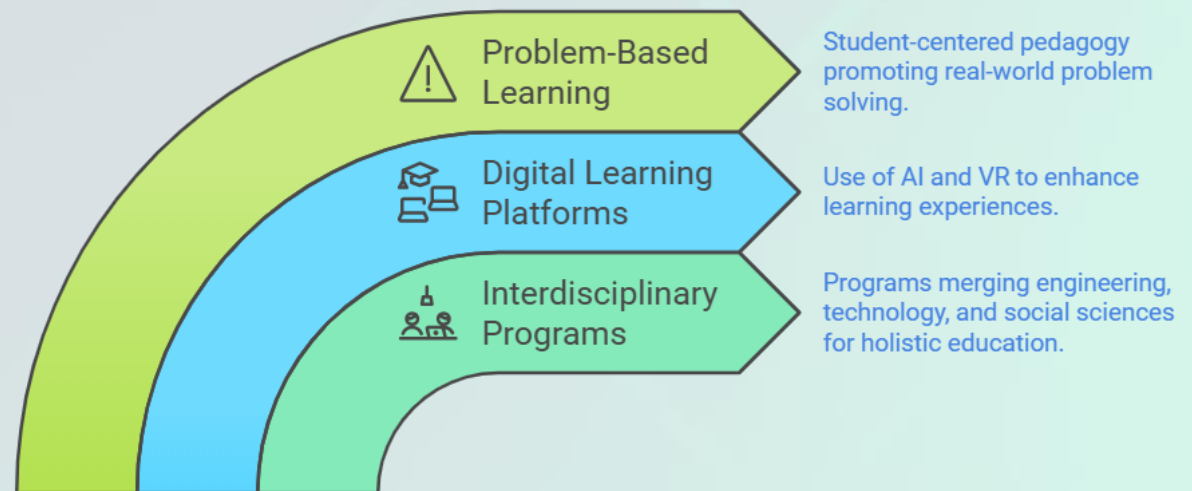
Interdisciplinary Programs

UTM has launched new interdisciplinary programs that merge engineering, technology, and social sciences. This approach provides students with a holistic education, preparing them to address multifaceted global challenges. By integrating diverse fields of study, UTM fosters a learning environment that encourages innovative thinking and collaboration among students from various disciplines.

Problem-Based Learning (PBL)

UTM strengthened its emphasis on Problem-Based Learning (PBL), a student-centered pedagogy that encourages active learning through real-world problem solving. PBL has been integrated into various programs, fostering critical thinking, collaboration, and innovation. One of the initiatives to improve problem-based learning at UTM was the Global Collaborative Learning (GCL) 2023 program, which brought together four prominent universities from four nations. Participants were trained in the Design Thinking Process, which helped them overcome a given problem.

UTM's Educational Innovations

Problem-Based Learning — Student-centered pedagogy promoting real-world problem solving.

Digital Learning Platforms — Use of AI and VR to enhance learning experiences.

Interdisciplinary Programs — Programs merging engineering, technology, and social sciences for holistic education.

Research Contributions to Educational Innovation at UTM

Educational Technology Research

In 2023, UTM researchers delved into the integration of emerging technologies in education, including artificial intelligence, gamification, and data analytics. These studies aimed to personalize learning experiences and enhance educational outcomes. A pivotal event was the Future Tech Innovation Research (FTIR) meeting, which focused on institutionalizing Malaysia's National AI Policy and AI Governance System. This meeting represented a significant milestone in positioning AI as a vital partner in national development, reflecting Malaysia's commitment to becoming a future-ready nation.

Pedagogical Innovation Studies

The university's exploration of new pedagogical approaches, such as flipped classrooms and blended learning, has led to continuous improvements in teaching practices across the institution. In November 2023, UTM organized the New Academia Learning Innovation Competition (NALI 2023), themed "Resilience Education for Future-oriented Quality Graduate." This competition aimed to inspire innovative teaching and learning strategies that equip graduates to tackle future challenges.

Equity in Education Studies

UTM has been proactive in researching the barriers that hinder educational access and success, particularly for students from low-income and marginalized backgrounds. The insights gained from this research have been instrumental in shaping policies and programs designed to promote educational equity. By addressing these challenges, UTM aims to create a more inclusive educational environment for all students.

Gold Medalists of NALI 2023

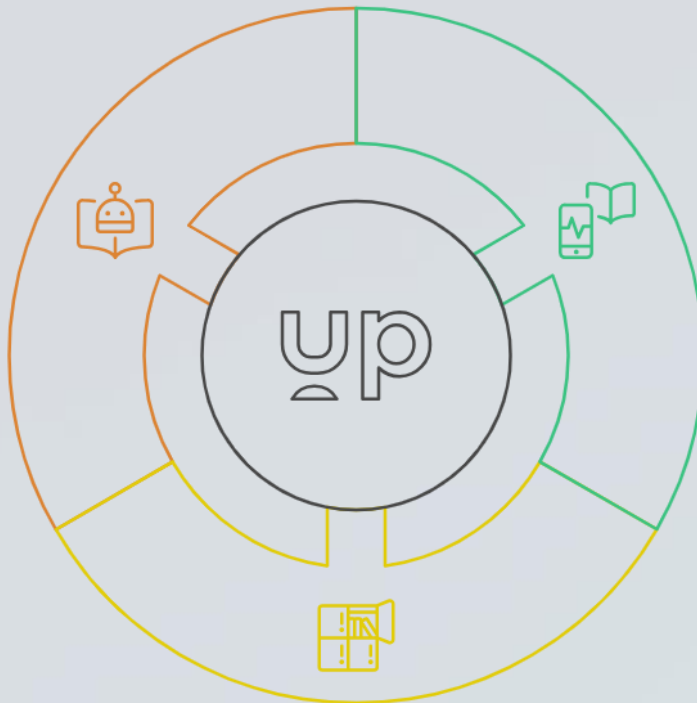The following projects were recognized as Gold Medalists at NALI 2023:

- Revitalizing Class Through Game Based Oral Test: Rethinking Assessments for Future Oriented Graduate
- ARCHVISION VR: Empowering Next-Gen Architects Through Immersive Design Pedagogy
- Empowering Reading Literacy: Applying Bandura's Social Learning Theory in Virtual Reading Classes Via Facebook Live Platform
- HAUREL: Elevating HR Tech Education Through Hybrid, Authentic, And Micro-Reflective Learning for Digital Excellence
- WL2A: Web Log Augmented Analytics for UTM E-Learning Environment Excellence

UTM Educational Research Initiatives

Innovative Educational Projects at NALI 2023

Pedagogical Innovation
New teaching methods for future-ready graduates

Educational Technology
Integration of AI and data analytics in education

Educational Equity
Addressing barriers for marginalized students

E-Learning Analytics
Web log analytics for improving e-learning environments

Game-Based Oral Test
A project focusing on future-oriented assessments through gamification

Hybrid HR Tech Education
Enhancing HR education with hybrid and reflective learning

VR for Architects
An immersive design pedagogy for aspiring architects

Social Learning in Reading
Applying social learning theory in virtual reading classes
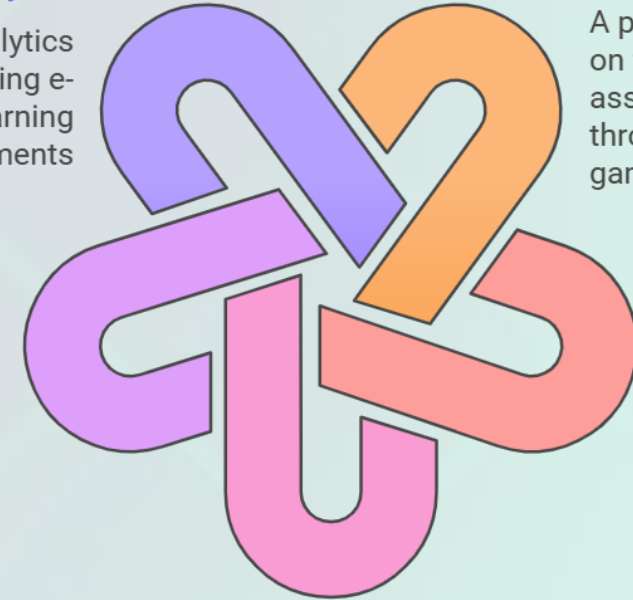
5

GENDER EQUALITY

UTM's Strategic Approach to SDG 5

UTM's strategy for promoting gender equality involves creating an inclusive environment where all individuals have equal opportunities to succeed. This strategy includes integrating gender considerations into institutional policies, enhancing support services for students and staff, and actively working to address gender-based inequalities within the university community.

Strategic Objectives:

- **Promoting Equal Opportunities:** Ensuring that all individuals have equal access to educational and career opportunities, regardless of gender.

- **Addressing Gender-Based Violence:** Implementing measures to prevent and respond to gender-based violence and harassment on campus.

- **Supporting Women in Leadership:** Encouraging and supporting the participation of women in leadership roles within the university and the broader community.

- **Fostering Gender Awareness:** Raising awareness about gender issues and promoting gender-sensitive practices across all areas of university life.

In line with Sustainable Development Goal 5 (SDG 5) on gender equality, Universiti Teknologi Malaysia (UTM) demonstrates a commitment to advancing educational opportunities for women, especially in higher education and STEM fields. In 2023, UTM welcomed 8,826 women starting degree programs, including 129 first-generation female students, reflecting UTM's efforts to make university education accessible for women from underrepresented backgrounds.

Among UTM's 5,872 graduates, 3,449 specialized in STEM, Arts & Humanities, and Social Sciences, with women making up 1,979 of these graduates. Specifically, women represented 53% of STEM graduates (547 out of 1,028) and a significant portion in the Arts & Humanities and Social Sciences (1,432 out of 2,421), highlighting UTM's role in empowering women in diverse fields.

This proportion emphasizes the university's encouragement of women's participation in traditionally male-dominated disciplines like STEM, alongside strong representation in humanities and social sciences.

UTM's gender-inclusive approach supports Malaysia's progress towards SDG 5 by creating pathways for women to excel academically and professionally, ensuring gender equity across diverse fields and contributing to a balanced workforce equipped to address societal challenges with diverse perspectives.

Distribution of Female Graduates by Subject Area

Total Graduates vs Female Graduates by Subject Area
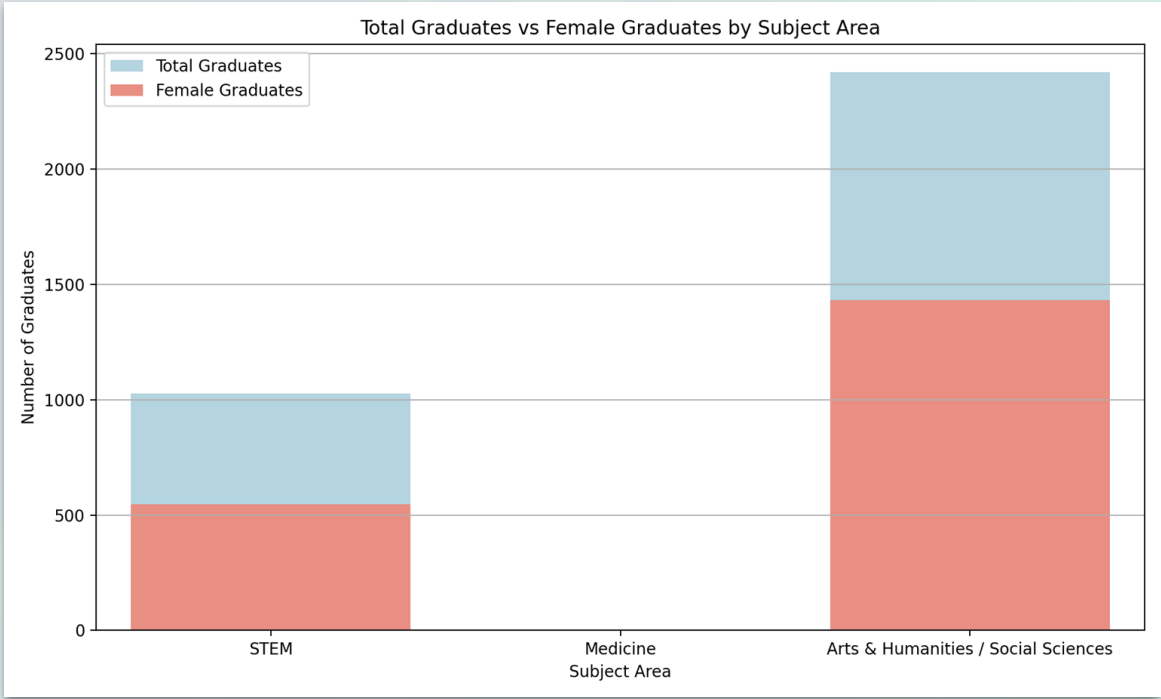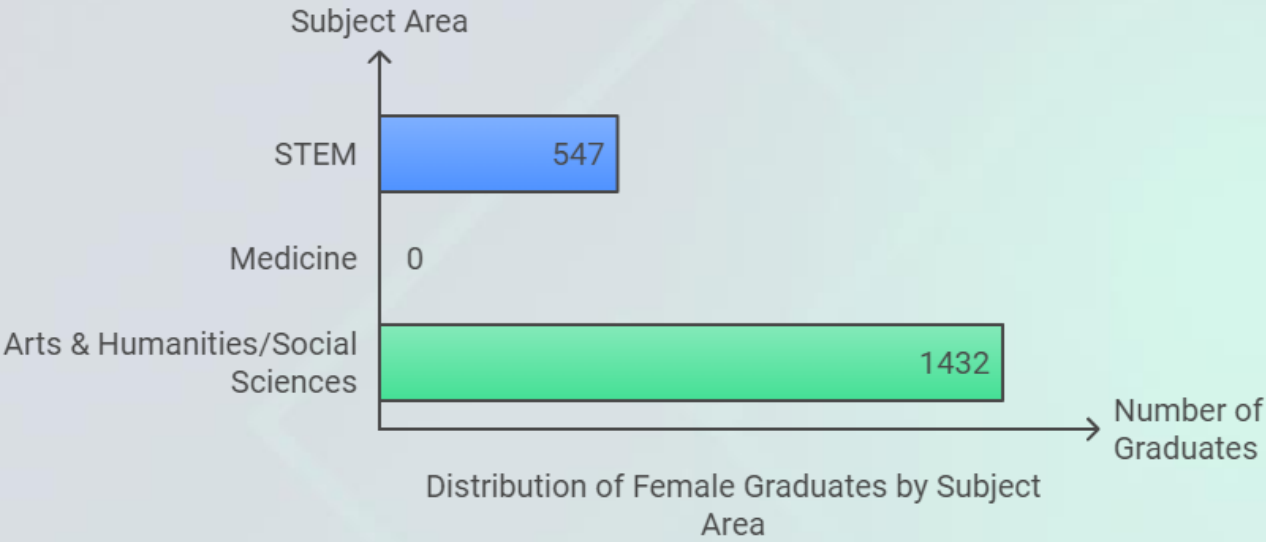
Women and Innovation at UTM

World Intellectual Property Day 2023 served as a platform for UTM to showcase the diverse range of innovations spearheaded by women. The event highlighted how these researchers are contributing to technological advancements, addressing environmental challenges, and developing products that can significantly improve quality of life.

Impact of UTM's SDG 5 Initiatives in 2023
The impact of UTM's initiatives toward SDG 5 in 2023 can be observed through several key outcomes:
- Increased Gender Awareness and Sensitivity: UTM's efforts have led to greater awareness of gender issues among students and staff, contributing to a more inclusive and respectful campus environment.
- Improved Support for Affected Individuals: The university's support services have provided crucial assistance to individuals affected by gender-based violence and discrimination, improving their well-being and enabling them to continue their studies and work.
- Enhanced Representation of Women in Leadership: UTM's initiatives to promote women's leadership have resulted in increased representation of women in senior roles within the university and the broader community.

6

6 CLEAN WATER AND SANITATION

CLEAN WATER & SANITATION

UTM's Strategic Approach to SDG 6

UTM's strategy for advancing SDG 6 focuses on improving water management practices, ensuring access to clean water and sanitation facilities on campus, and contributing to broader water sustainability efforts through research and community engagement.

Strategic Objectives:

- **Improving Water Management:** Implementing measures to enhance the efficiency of water use and reduce waste on campus.

- **Ensuring Access to Sanitation Facilities:** Providing and maintaining high-quality sanitation facilities for all members of the university community.

- **Promoting Sustainable Water Practices:** Engaging in research and initiatives that promote sustainable water use and conservation.

- **Community Outreach and Education:** Raising awareness about water and sanitation issues and supporting community efforts to improve water access and quality.

Volume of water used in the university

The annual per capita water consumption is approximately 133.34 m³ per person per year, which translates to about 365.31 liters per person per day. This is compared to the WHO benchmark of 100 liters per person per day, indicating that the campus usage is significantly higher than the recommended level.

Total water used
4,165,769 m³

Number of individuals
31,242

Water Volume

Campus Population
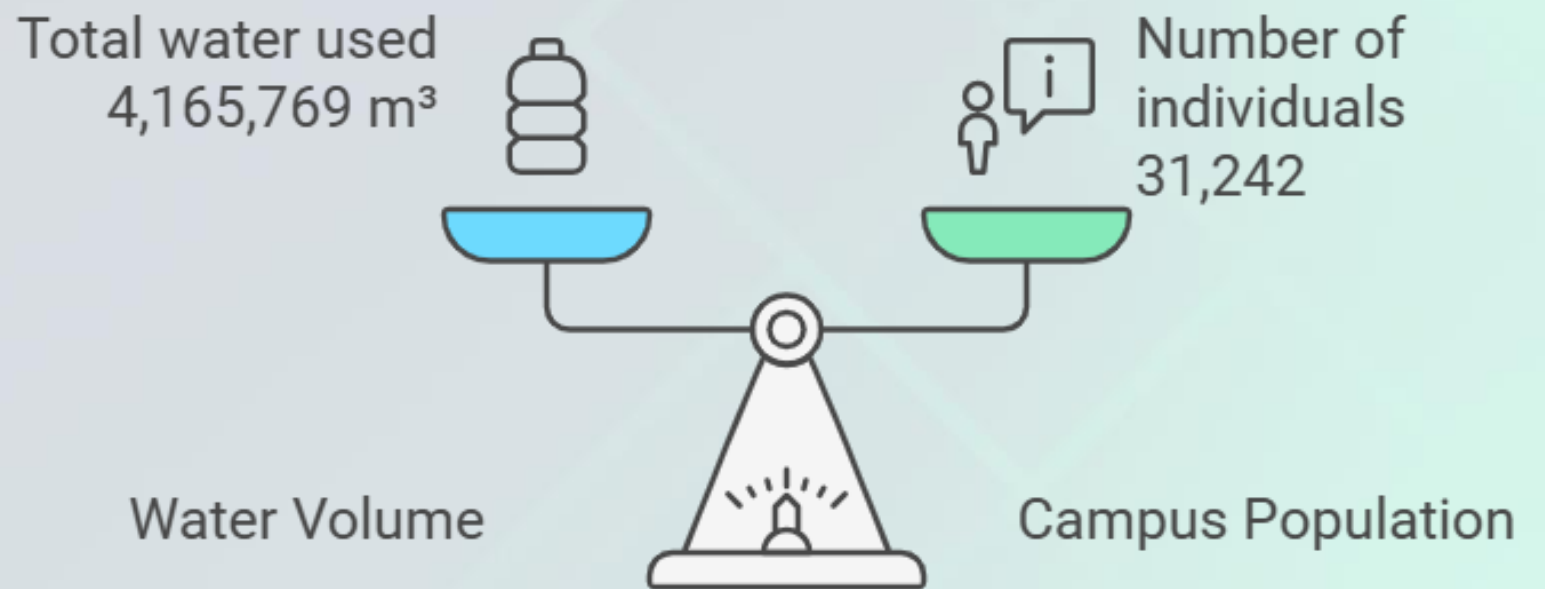
Evaluating water usage per capita.

UTM Becomes First University to Develop Rock Aquifer Well

UTM has achieved a pioneering milestone as the first higher education institution to develop a rock aquifer well. The well, located in the UTM Recreational Forest in Skudai, Johor Bahru, was inaugurated by UTM Vice-Chancellor Prof. Datuk Ir. Dr. Ahmad Fauzi Ismail. This innovative project aims to provide a sustainable and natural source of groundwater, supporting environmental conservation and addressing water supply challenges.

During the launch, Prof. Datuk Ir. Dr. Ahmad Fauzi emphasized the well's significance in promoting sustainable resource management. The rock aquifer well taps into natural underground rock formations to access groundwater, a critical approach in regions where surface water resources are scarce or seasonal. The project not only showcases UTM's commitment to environmental innovation but also serves as a research and educational platform for students and faculty in fields related to geology, hydrology, and environmental science.

Foto NSTP/Izz Laily Hussein

Research and Innovation in Water

Water Security Hub: Water Security and Sustainable Development Hub is a research programme funded by the Government of the United Kingdom (UK) through UK Research and Innovation (UKRI) under the Global Challenge Research Fund (GCRF) to address water security issues. This report provides the work that was carried out in Malaysia as one of the collaborators under the Hub. It started with an introduction which covered the introduction of the Hub and the study that was carried out in Malaysia, specifically the Johor River Basin. The report is then further divided into Case Studies which provide the findings of different aspects of the study. The Water Security and Sustainable Development Hub which was led by Newcastle University, UK, started in February 2019 and ended in September 2024. The Hub comprised 11 institutions across five Collaboratory countries, namely the UK, India, Colombia, Ethiopia, and Malaysia. Besides the UK, each country was represented by two institutions. Malaysia Collaboratory was represented by the Centre for Environmental Sustainability and Water Security (IPASA), Universiti Teknologi Malaysia (UTM), Skudai and Newcastle University Medicine Malaysia (NuMED), Nusajaya.

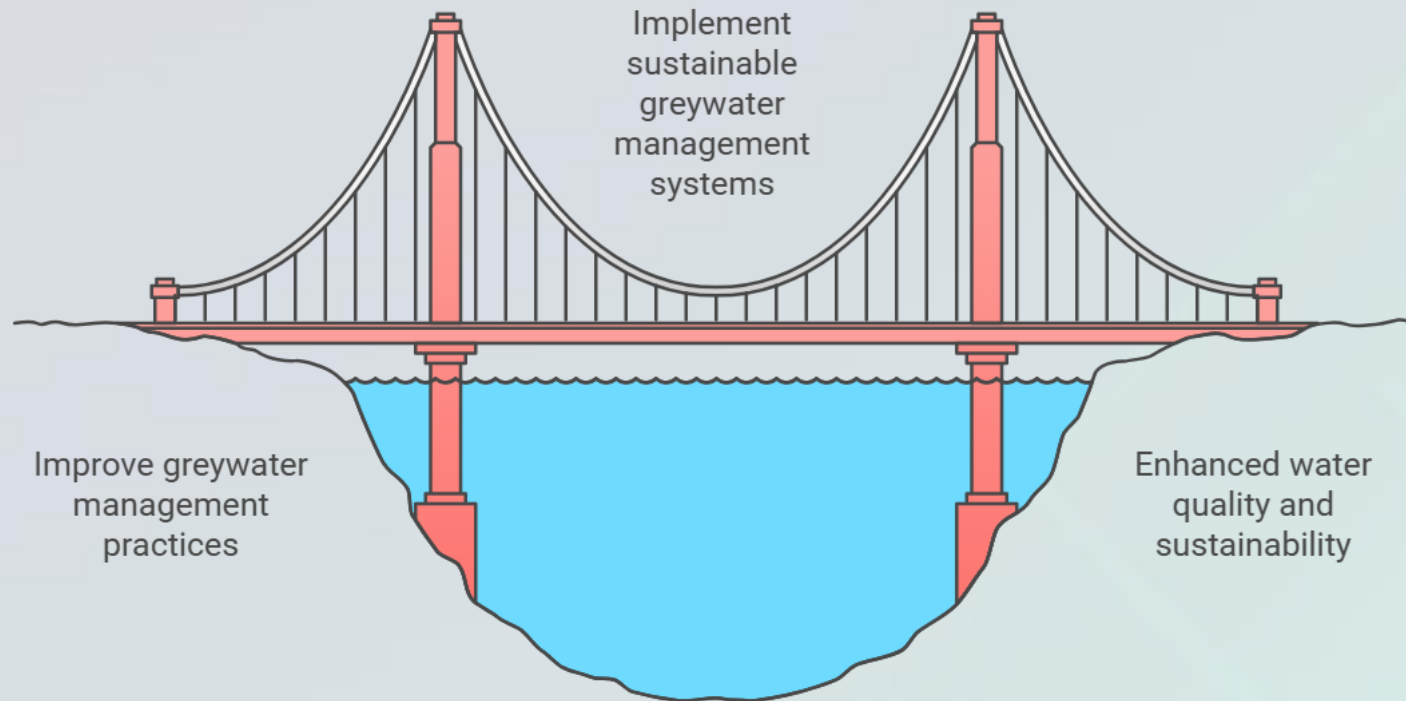PROGRAM LOVE SUNGAI JOHOR, KG. SG. TELOR

River Awareness Program with Community and Schools

Program Love Sungai Johor 2023

Greywater Management at UTM

Water pollution poses a significant threat to sustainability, particularly in regions experiencing rapid urbanization and population growth. Greywater, generated from sources like laundry and food courts, often contains harmful pollutants that compromise water quality and endanger public health. At Universiti Teknologi Malaysia (UTM), Skudai, the issue of greywater management has gained critical attention due to its environmental implications and alignment with **Sustainable Development Goal 6 (SDG 6): Clean Water and Sanitation**. This article explores UTM Skudai initiatives, strategies, and research contributions to addressing greywater pollution, emphasizing the significance of sustainable water management practices.

Understanding Greywater and Its Impact

Greywater is wastewater from non-industrial sources such as washing machines, sinks, and showers. Unlike blackwater (sewage), greywater contains lower concentrations of organic matter but can still carry harmful pollutants like detergents, oils, and food waste. Improper discharge of greywater contaminates natural water bodies, threatening ecosystems and human health. Given that rivers provide 98% of the world's water supply, the need for effective greywater management is urgent.

At UTM Skudai, greywater from food courts and laundries is a major concern. The university serves as a microcosm of broader societal challenges, reflecting the complexities of managing water pollution in urban settings. Research conducted by Dr. Mohamed Zuhaili Mohamed Najib underscores the urgency of implementing sustainable greywater management systems to prevent further environmental degradation.

Greywater Management for Sustainability

Implement sustainable greywater management systems

Improve greywater management practices

Enhanced water quality and sustainability

Community Engagement and Education by Centre for Environmental Sustainability and Water Security (IPASA)

Throughout year 2023, IPASA have conducted a series of open webinars to educate public on water related matters.

Public Speaking Program in Conjunction with World's River Day

Since 2021, Universiti Teknologi Malaysia (UTM), through its Centre for Environmental Sustainability and Water Security (IPASA), has organized an annual national public speaking competition for school students in Malaysia, held in conjunction with World Rivers Day. This initiative aims to cultivate awareness among younger generations on the importance of conserving and protecting river ecosystems, aligning with SDG 6, which emphasizes clean water and sustainable water management for all.

Through the public speaking platform, students explore critical issues such as pollution, water conservation, and sustainable river management, gaining knowledge about the significant role rivers play in biodiversity, community health, and climate resilience. By empowering young participants to research and articulate the challenges facing Malaysia's rivers, this program fosters environmental stewardship and encourages students to advocate for sustainable practices within their communities.

The program directly supports SDG 6 by educating the next generation on water quality issues and instilling values of sustainability and conservation. By raising awareness and engaging youth in dialogue about water protection, UTM's initiative contributes to long-term societal change, promoting behaviours that can reduce pollution, protect water resources, and encourage community-wide efforts to maintain clean, resilient river systems.

Enhancing Sanitation Facilities

Key Initiatives and Programs in 2023

Campus Water Management and Conservation UTM has implemented several initiatives to improve water management and conservation on campus. Key initiatives include:

- Water Recycling Systems: UTM has installed water recycling systems to capture and reuse rainwater and greywater for non-potable uses, such as irrigation and toilet flushing. These systems help reduce the demand for potable water and minimize water waste.
- Water-Efficient Technologies: The university has adopted water-efficient technologies, including low-flow fixtures and automatic irrigation systems, to minimize water consumption across campus facilities.
- Water Consumption Monitoring: UTM has established a monitoring system to track water usage across different campus buildings and identify areas for improvement. This data-driven approach supports efforts to reduce water consumption and increase efficiency.

SEKSYEN PEMAJUAN PELAJAR & ALUMNI

PUSAT KESIHATAN UNIVERSITI

Universiti Teknologi Malaysia Kuala Lumpur (UTMKL) has installed eight water filtration units at key locations across the campus, including Kolej Siswa Jaya and the Student Affairs Office, as part of its efforts to support Sustainable Development Goal 6 (SDG 6) – "Clean Water and Sanitation." This initiative ensures that students and staff have access to clean and safe drinking water, which is essential for their health and well-being. With the availability of these water filtration units, the university also aims to reduce reliance on bottled water, thereby contributing to the reduction of plastic waste.

This initiative not only enhances the well-being of the campus community but also fosters awareness of environmental sustainability. Easy access to clean water through these units helps students reduce their expenses and ensures they always have access to safe drinking water, in line with UTMKL commitment to being a sustainable institution that cares for the welfare of its campus community.

KOLEJ SISWA JAYA

BLOK A

BLOK B

BLOK C

7

AFFORDABLE & CLEAN ENERGY

UTM's Strategic Approach to SDG 7

UTM's strategy for advancing SDG 7 involves integrating clean energy solutions into campus operations, promoting energy efficiency, and engaging in research and innovation related to sustainable energy technologies.

Strategic Objectives:

- **Promoting Renewable Energy Use:** Increasing the adoption of renewable energy sources, such as solar, wind, and biomass, on campus and in research projects.

- **Enhancing Energy Efficiency:** Implementing measures to reduce energy consumption and improve efficiency in campus buildings and operations.

- **Supporting Sustainable Energy Research:** Conducting research on new energy technologies and solutions that contribute to sustainable energy practices.

- **Raising Awareness and Engagement:** Educating the university community and the public about the importance of clean energy and sustainable practices.

UTM's Renewable Energy Certificate Redemption and Sustainability Efforts

Carbon reduction and emission reduction process

Categories

Renewable Energy Consumption Offset (MWh) — 43924.709

Carbon Emission Offset (tonnes CO_2) — 33294.929

Values

UTM Renewable Energy Offset Impact
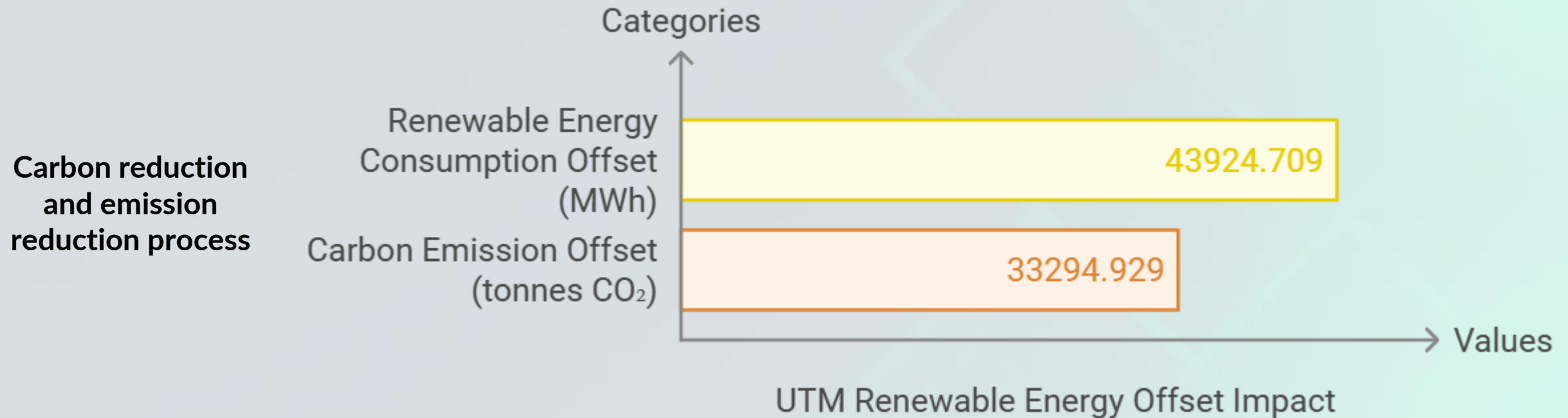
Key Details:

- Renewable energy equivalent to 43,924.709 MWh.
- This action offsets approximately 33,294.929 tonnes of CO_2 emissions from purchased electricity.

Renewable Energy Sources: The electricity was generated from renewable sources, including solar and hydroelectric power plants in Malaysia.

Kerian Solar Sdn. Bhd. (solar energy) and Stesen Janaelektrik Ulu Jelai (hydroelectric energy).

Enhancing Energy Efficiency and Managing Costs
UTM's Progress Towards SDG 7

The graphs highlights UTM's efforts to reduce electricity consumption and improve energy efficiency, as reflected by the improved Energy Efficiency Index (EEI) from 47.7 kWh/m² in 2019 to 41.1 kWh/m² in 2023. However, the increasing costs are attributed to UTM's subscription to the Green Energy Tariff (GET), a strategic initiative aimed at further reducing carbon emissions associated with electricity consumption. This commitment reflects UTM's proactive approach to sustainability, prioritizing the use of cleaner energy sources to minimize its environmental footprint and align with global efforts to combat climate change.

Monthly Energy Consumption (kWh) Comparison: 2019 vs 2023
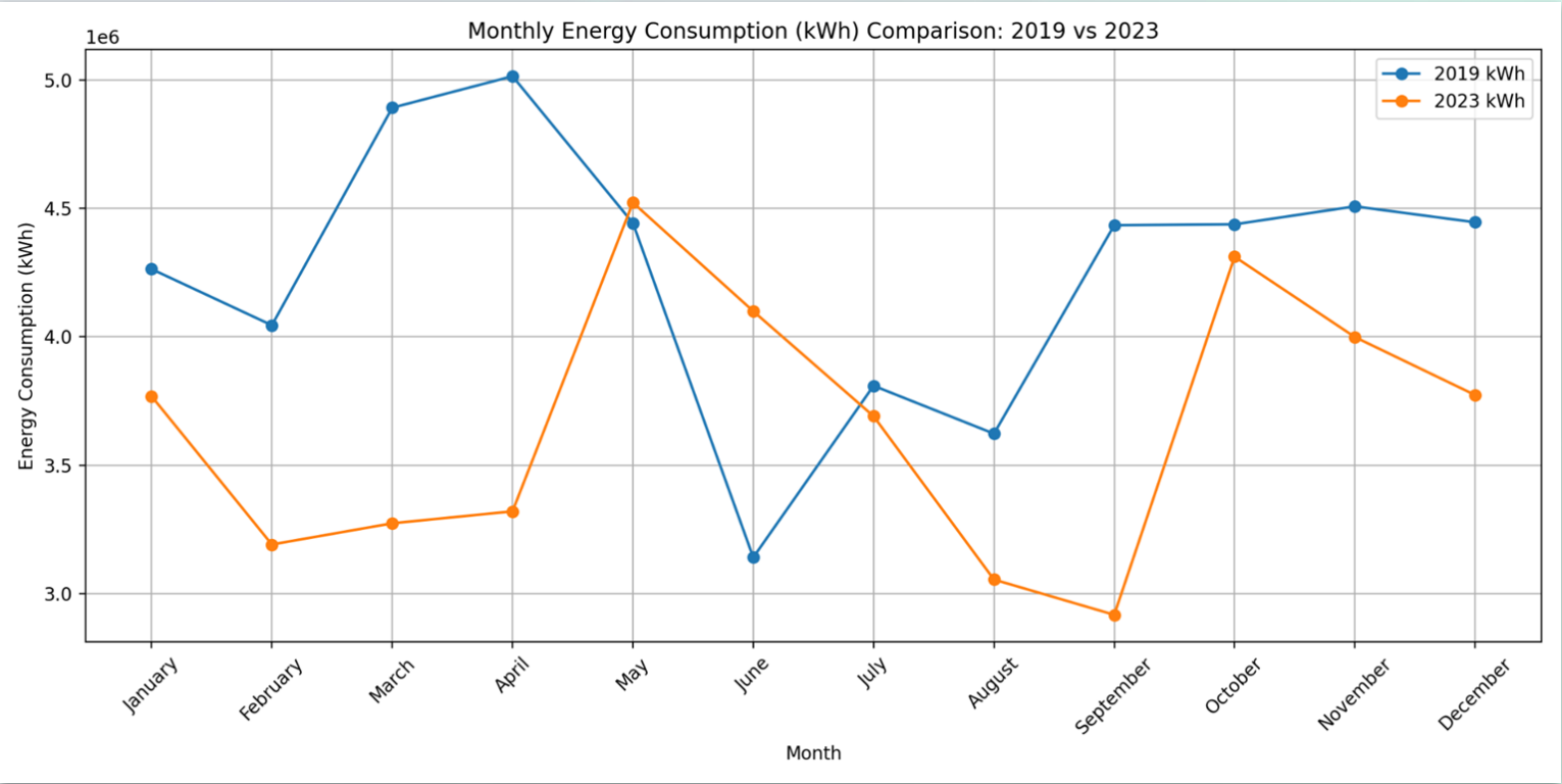
Energy Efficiency Improvements

UTM has implemented various measures to enhance energy efficiency across campus facilities. Key improvements include:

- **Energy-Efficient Building Upgrades:** The university has upgraded lighting, heating, ventilation, and air conditioning (HVAC) systems to more energy-efficient models, resulting in significant reductions in energy consumption.

- **Smart Energy Management Systems:** UTM has adopted smart energy management systems that monitor and control energy use in real time, optimizing energy consumption and identifying opportunities for further efficiency improvements.

The comparison of UTM's electricity consumption and costs between 2019 and 2023 reveals a notable reduction in electricity usage, with an overall 14% decrease in consumption. However, despite this reduction, the total cost of electricity in 2023 increased slightly by 1.7%, suggesting that factors such as rising electricity tariffs or operational changes may have offset the savings achieved through lower consumption. Additionally, the improvement in the Energy Efficiency Index (EEI) from 47.7 kWh/m² in 2019 to 41.1 kWh/m² in 2023 indicates enhanced energy efficiency across the campus. These findings underscore the need for continued efforts to manage energy costs effectively while maintaining or improving efficiency.
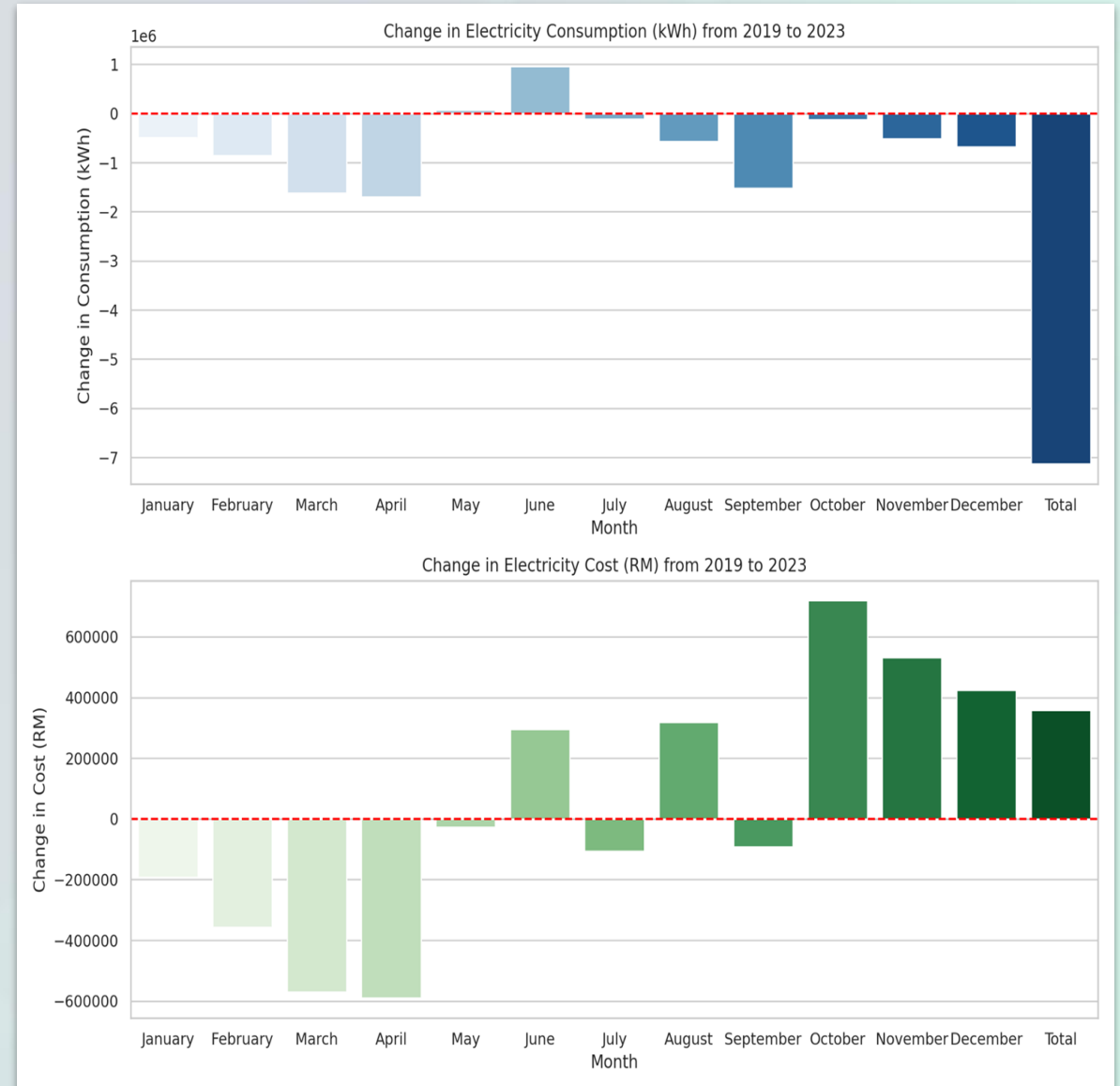
UTM Eco-Park: Green and Smart Nanogrid system

To provide a platform for green and sustainable energy system research, a Nanogrid system consisting of energy source drawn from the National Grid, Solar Photovoltaic system, and Biogas system is developed and is currently in operation to provide green energy for UTM Eco-Park. The renewable energy is used to support energy consumption of the Aquaponic system, Fertigation and Cabin that is located in UTM Eco-Park.

The living lab is now used for collection of real-time data in relation to energy generation and consumption for the development of smart nanogrid management and control system. Some of the main features of the ongoing research includes development and testing of physics based machine learning algorithms using Artificial Neural Network and Mathematical Optimization.

A comprehensive dashboard that illustrates the overall performance of the system (both supply and demand) is also being developed on-site and is tailored to meet the needs of the market for green energy management.

So far since Jan 2024 to Nov 2024, the system has generated 5,230 kWh of green energy which is equivalent to a carbon offset of 3,964.34 tonne CO_2 equivalent.

H-OTEC Malaysia Model: Pioneering Sustainable Energy and Water Solutions

The H-OTEC (Hybrid Ocean Thermal Energy Conversion) Malaysia Model is a pioneering project aimed at integrating OTEC technology with desalination to drive commercialization and sustainable development.

The H-OTEC Malaysia Model is the first operational plant of its kind globally. It is located at UPM-UTM OTEC Centre at Telok Kemang N. Sembilan and aims to generate electricity by exchanging heat between warm surface seawater and cold deep seawater, while also producing desalinated water.

The plant can generate electricity and produce up to 2 million liters of drinkable water per megawatt (MW) of power output daily. This makes it an attractive solution for regions facing water scarcity, especially island nations.

The facility serves as a research hub, fostering collaboration among researchers, students, and industry partners. It includes a 336 m² research building with plans for future expansion to 1000 m², supporting the development of new technologies and start-ups.

The H-OTEC system offers a fixed cost of production and is less susceptible to price volatility compared to traditional energy sources like coal or petroleum. It also has a lower environmental footprint, contributing to Malaysia's low-carbon goals.

Malaysia's abundant islands and surrounding seas make it an ideal location for OTEC technology. The project aligns with Malaysia's National Energy Policy (2022–2040) and contributes to global efforts toward achieving the United Nations Sustainable Development Goals (SDGs), especially in renewable energy and water security

8

DECENT WORK
& ECONOMIC
GROWTH

8 DECENT WORK AND ECONOMIC GROWTH

UTM's Strategic Approach to SDG 8

UTM's strategy for advancing SDG 8 involves creating opportunities for economic development through education and research, supporting entrepreneurship, and promoting fair and safe working conditions within the university community.

Strategic Objectives:

- **Enhancing Employability:** Providing students with the skills and knowledge needed to thrive in the job market and supporting their transition from education to employment.

- **Supporting Entrepreneurship:** Encouraging and facilitating entrepreneurial activities and innovation among students and staff.

- **Promoting Fair Labor Practices:** Ensuring that university operations and employment practices adhere to fair and safe labor standards.

- **Fostering Economic Partnerships:** Collaborating with industry partners to support economic growth and job creation.

Distribution of Students with and without Work Placements at UTM in 2023

Universiti Teknologi Malaysia (UTM) has made significant strides in advancing Sustainable Development Goal (SDG) 8, which focuses on promoting decent work and sustainable economic growth. SDG 8 emphasizes creating inclusive employment opportunities, fostering innovation, and ensuring fair labor practices. However, the image provided highlights a concerning disparity in student work placements at UTM, showing that the vast majority of students do not have access to work placements, which is a critical component of SDG 8's goal of decent work for all.

This lack of work placements may hinder students' ability to gain practical experience and secure productive employment post-graduation. To address this gap, UTM can enhance partnerships with industries to provide more internships and apprenticeships, aligning with SDG 8's targets of improving job quality and reducing unemployment. Additionally, promoting entrepreneurship and innovation among students can help bridge the gap in employment opportunities.

Despite these challenges, UTM's overall commitment to SDGs is commendable, as demonstrated by its strong performance in other areas such as clean energy and infrastructure. However, focusing on improving work placement opportunities will be crucial for advancing SDG 8 at the university level.

Number of Students with and without Work Placements

9
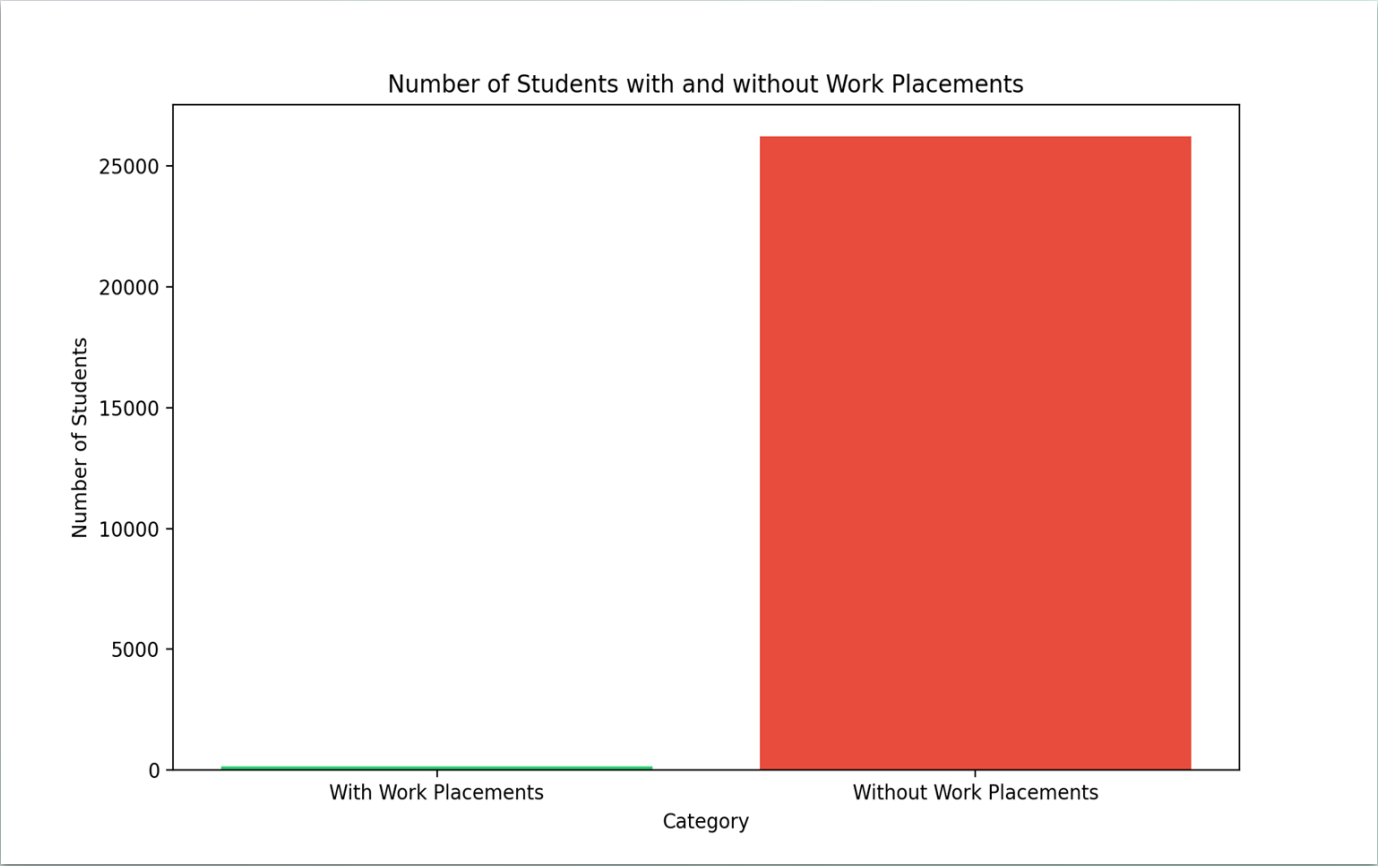
INDUSTRY, INNOVATION & INFRASTRUCTURE

UTM continues to lead the way in advancing SDG 9: Industry, Innovation, and Infrastructure by driving sustainable industrial growth, advancing research innovation, and contributing to strong infrastructure development. UTM's 2023 achievements demonstrate its commitment to impactful research and commercialization, while the Blueprint@enVision for 2024 outlines strategic goals for further enhancing its contributions to these areas. This article focuses on UTM's key achievements in 2023 and its forward-looking initiatives for 2024.

Joint Publications and Research Collaborations in 2023

In 2023, UTM's research collaborations continued to grow, contributing to high-impact publications and advancing innovation in line with SDG 9: Industry, Innovation, and Infrastructure. The increasing recognition of UTM's research outputs is reflected in the 5-year citation trend, which has shown a steady rise from 84,447 citations in 2018 to 173,667 citations in 2023. This growth underscores UTM's significant contribution to the global research community, particularly in advancing technological innovations and sustainable industrial solutions.

Industrial Collaborations: UTM recorded 106 joint publications with industrial partners, demonstrating its role in solving industry-specific challenges and creating practical solutions for sustainable industrial growth.
International Collaborations: UTM has expanded its global research partnerships through 1,787 international joint publications, contributing to solving global challenges in innovation and infrastructure development.

National Collaborations: UTM's national collaborations reached 1,403 publications, highlighting its influence on Malaysia's research ecosystem and its contribution to national development goals.

Citation Trend
5-year citation from Scopus

Number of Citations — 2018: 84447, 2019: 100874, 2020: 112508, 2021: 133204, 2022: 165691, 2023: 173667
Source : MyRA

Total Research Income from Industry and Commerce

Subject Area

STEM — 284838629.36

Medicine — 4089755.98

Arts & Humanities / Social Sciences — 27874372.03

Research Income (in USD)
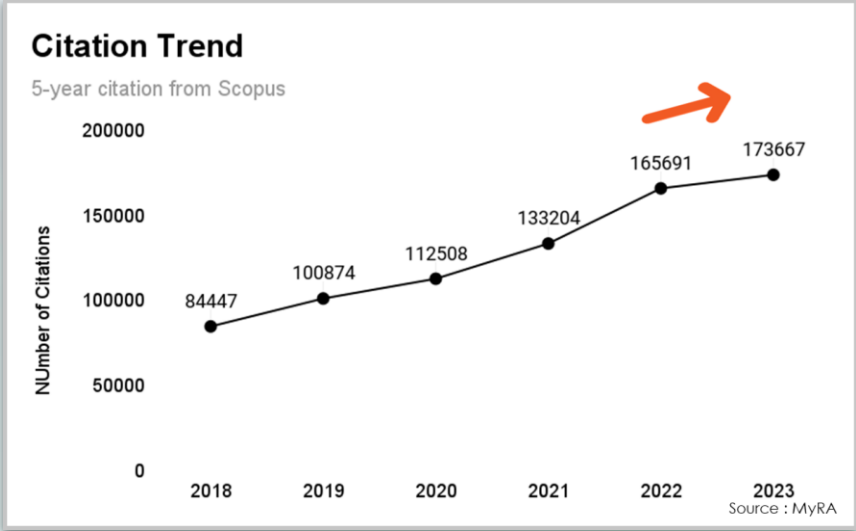
Research Income from Industry and Commerce by Subject Area
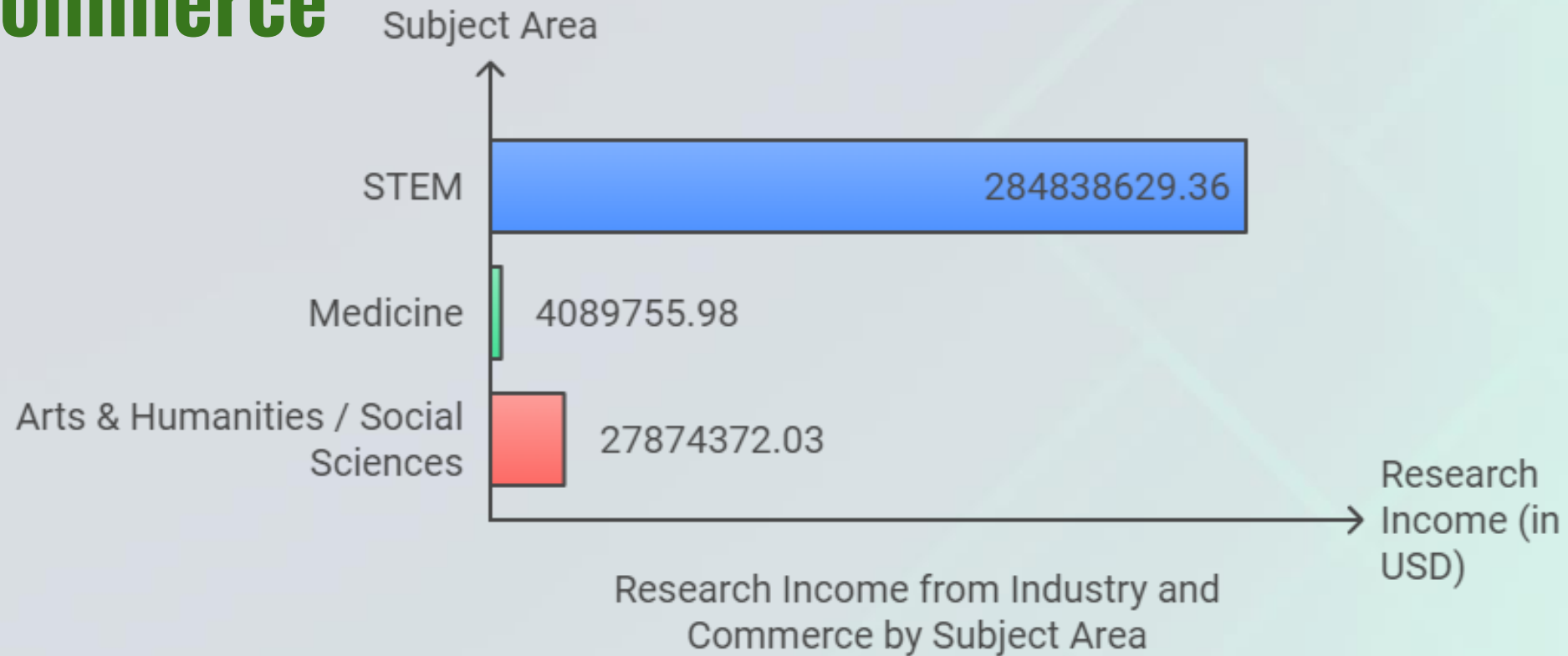
The total research income from industry and commerce is a significant indicator of the collaboration between academic institutions and the private sector. This income is essential for funding research projects, enhancing academic resources, and supporting innovation.

Q1/Q2 Indexed Publications in 2023

UTM's commitment to high-quality research was evident in 2023 with the publication of 1,266 Q1/Q2 indexed papers. The percentage of Q1/Q2 publications increased to 47.9%, reflecting the university's focus on contributing top-tier research to global academic platforms.

Metrics

Total Q1/Q2 Indexed Papers — 1266

Percentage Increase — 47.9

Values

UTM's Q1/Q2 Indexed Publications in 2023

UTM's Innovation Ecosystem

Commercialized Projects

Research Capabilities

Industry Collaboration

Societal Impact
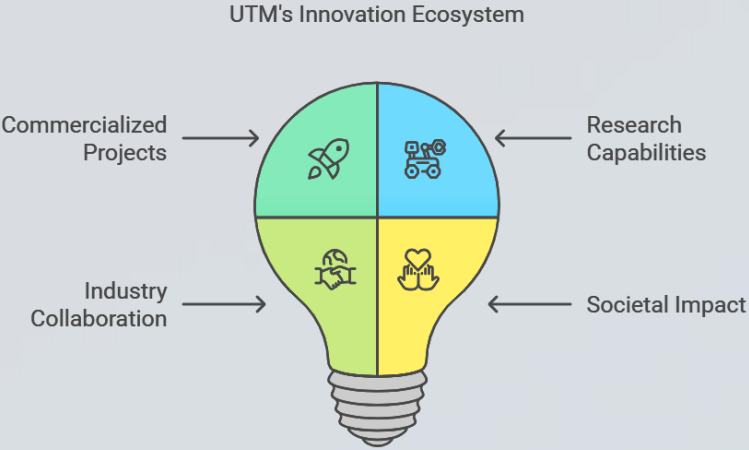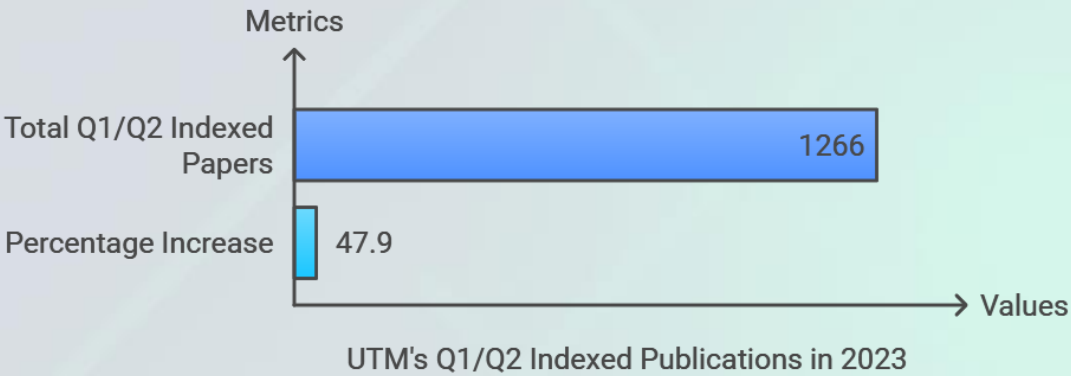
Patents and Innovations

UTM achieved significant success in the commercialization of research in 2023, launching 10 new commercialized projects—the highest number over the past four years. These projects reflect UTM's dedication to converting cutting-edge research into products that drive industrial and societal impact.

Gross Income from Product Commercialization

UTM's gross income from commercialization saw impressive growth in 2023, reaching RM 2,420,218. This figure represents a remarkable increase compared to previous years, highlighting the growing demand for UTM's innovations in the market.

UTM's Commercialization Success

Research and Development
Commitment to innovation and adaptation

Commercialization Strategies
Effective methods to boost income

Market Demand
Increasing consumer and industry interest
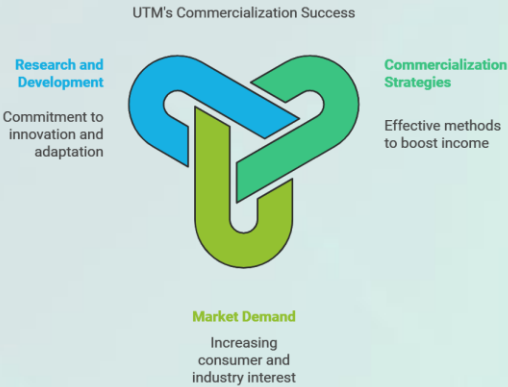
Industry, Innovation, and Infrastructure at UTM

Universiti Teknologi Malaysia (UTM) has made significant strides in the areas of industry, innovation, and infrastructure, particularly in alignment with the United Nations Sustainable Development Goals (SDGs). UTM's achievements are globally recognized, especially for SDG 7 (Affordable and Clean Energy), where it ranks first globally, and SDG 9 (Industry, Innovation, and Infrastructure), where it ranks 39th out of 1,591 institutions worldwide.

UTM's leadership in innovation is demonstrated through its impressive portfolio of intellectual property and technology commercialization:1692 patents
- 5327 copyrights
- 76 trademarks
- 41 utility innovations
- 75 industrial designs
- 16 integrated circuits
- 126 technology licenses
- 37 spin-off companies

UTM Intellectual Property and Technology Commercialization Portfolio

UTM Commercialisation Ecosystem
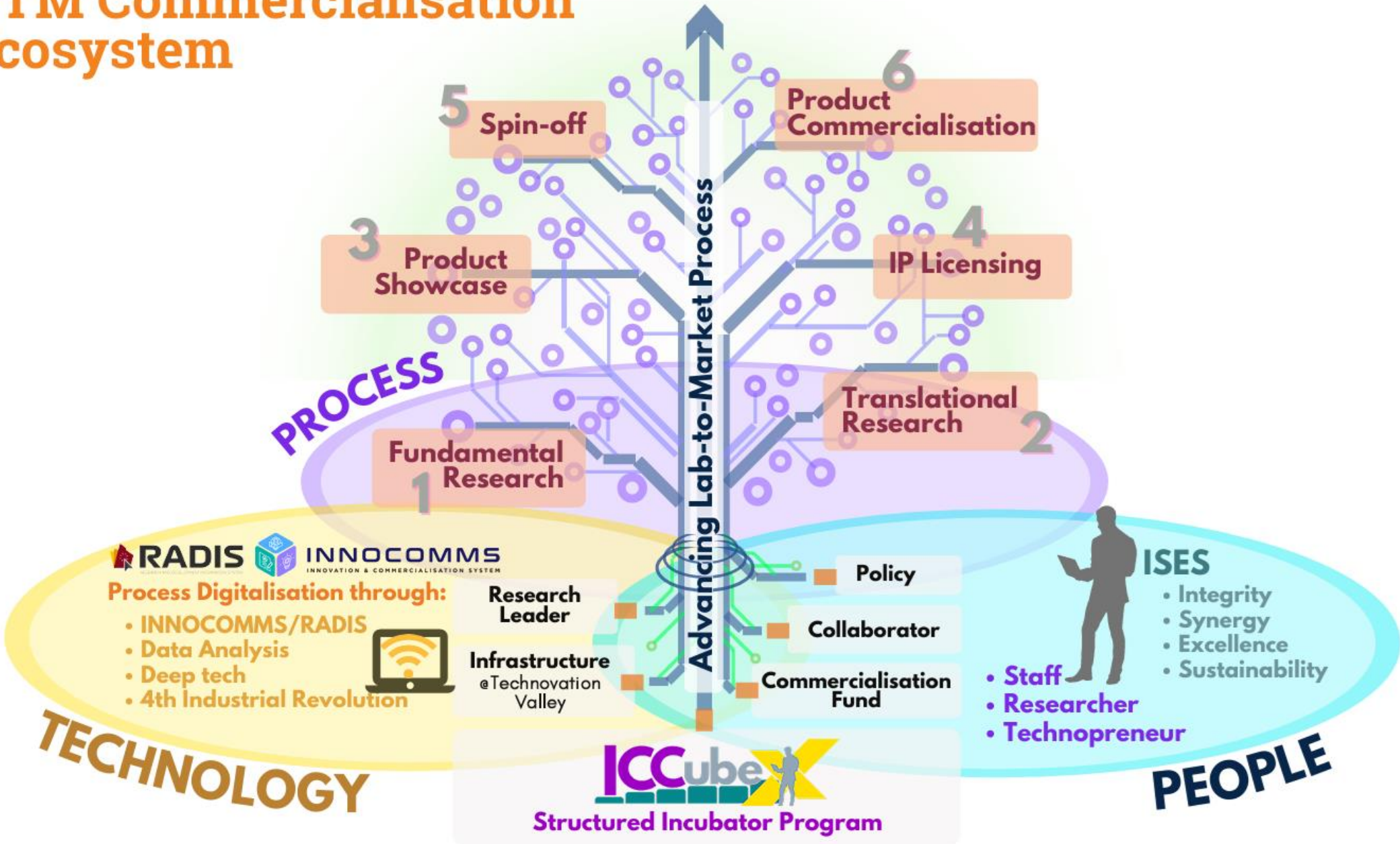
10
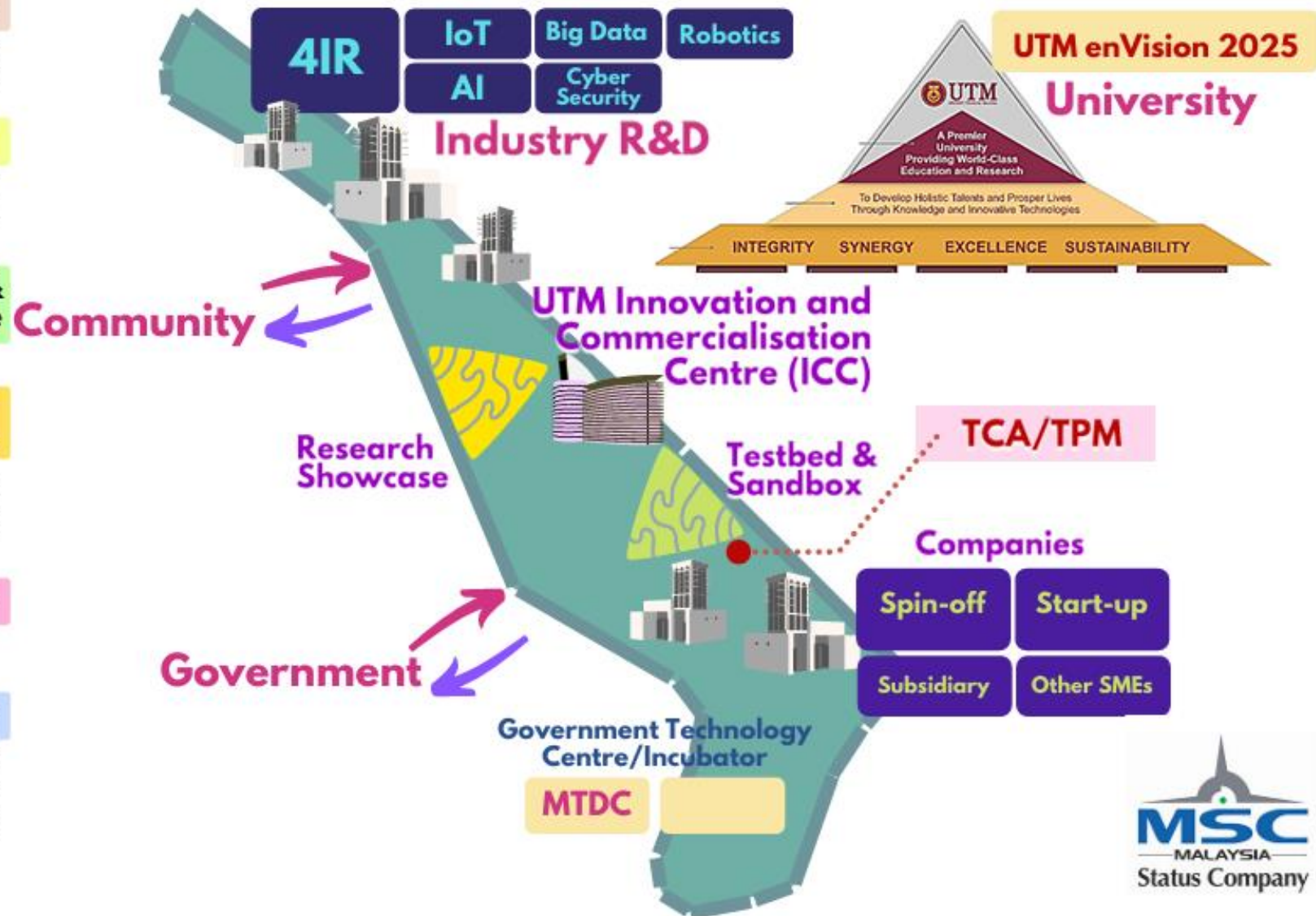
UTM's Strategic Approach to SDG 10

UTM's strategy for advancing SDG 10 involves creating an inclusive campus environment, supporting diverse communities, and implementing programs that address and mitigate inequalities. The university focuses on ensuring equitable access to education and opportunities, fostering a culture of inclusion, and supporting marginalized and underrepresented groups.

Strategic Objectives:

- **Promoting Equity and Inclusion:** Ensuring that all individuals have equal access to educational and career opportunities and fostering a campus culture that values diversity and inclusion.

- **Supporting Marginalized Groups:** Implementing programs and support services for marginalized and underrepresented groups to address barriers and promote their participation and success.

- **Addressing Systemic Inequalities:** Identifying and addressing systemic inequalities within university policies, practices, and structures to create a fair and equitable environment.

Number of Students
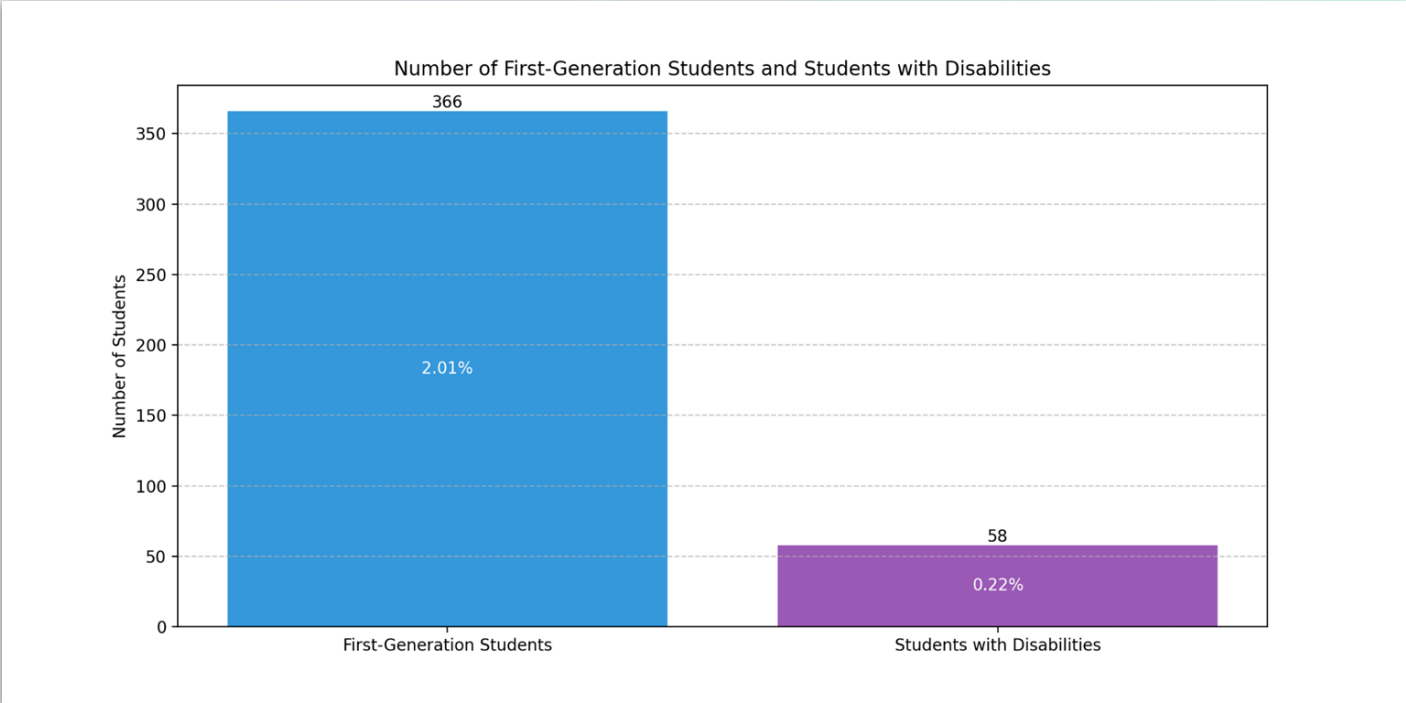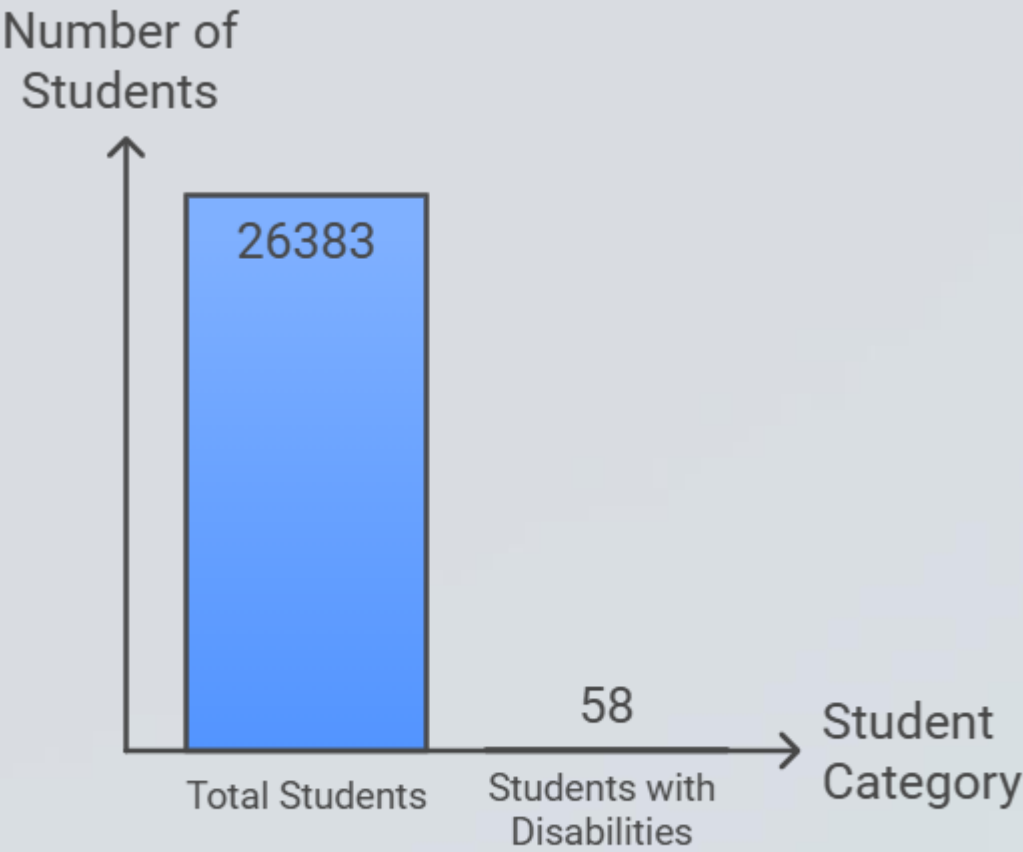
Proportion of Students with Disabilities

UTM has implemented various initiatives to support first-generation students, recognizing the unique challenges they face. Key initiatives include financial aid and scholarships to ease the financial burden, mentoring programs connecting students with faculty or alumni mentors, and pre-orientation programs to help students acclimate to campus life. Additionally, academic support services such as counselling, tutoring, and workshops are provided to ensure academic success. Community-building efforts, including social gatherings and dedicated student groups, foster a sense of belonging among first-gen students. These initiatives collectively address both academic and personal challenges, ensuring that first-generation students have the resources and support needed to succeed in higher education

Inclusive Education and Skills Development - UTM focuses on providing equitable access to education and skills development

Three academicians from the Institute of Technology Cambodia (ITC) have recently completed a 3-day training session on the Low Vacuum Scanning Electron Microscope (LV-SEM). The training program, which focused on sample preparation, imaging, and elemental analysis, was successfully conducted at the Microscopy Laboratory of MJIIT, UTM, from November 27 to November 29, 2023.

ASEAN-IVO Project in Malaysia: UTM Advancing Agriculture through Cutting-Edge Technology

Three leading institutions from Vietnam, Thailand, and Malaysia are collaborating to revolutionize farming through IoT and edge computing technologies. Vietnam's institution develops smart sensors for real-time monitoring of soil, weather, and crops. The Thai institution specializes in edge computing to enhance data processing and decision-making. Malaysia's institution integrates these technologies into practical farming applications. This project aims to boost agricultural efficiency, sustainability, and profitability, empowering local farmers with advanced tools and knowledge. It highlights the power of international cooperation in addressing global agricultural challenges and fostering innovation.

11

SUSTAINABLE CITIES & COMMUNITIES

UTM's Strategic Approach to SDG 11

UTM's strategy for advancing SDG 11 involves focusing on sustainable urban development, enhancing infrastructure, and promoting resilience in cities and communities. The university's approach includes research, community engagement, and practical initiatives that address the challenges of urbanisation.

Strategic Objectives:

- **Promoting Sustainable Campus Planning:** Encouraging the development of sustainable urban planning practices that integrate environmental, social, and economic considerations.

- **Improving Infrastructure:** Supporting the development and improvement of infrastructure that enhances urban living conditions and sustainability.

- **Enhancing Community Resilience:** Implementing initiatives that increase the resilience of cities and communities to environmental and social challenges.

- **Empowering Sustainable Practices:** Collaborating with communities to address local needs and promote sustainable practices.

Photo credit: UTM Registrar's Office

UTM's 2023 Commitment to SDG 11 Pioneering Sustainable Cities and Communities through Planetary Health and Collaborative Governance

Sustainable Campus Planning

Improving Infrastrructure

Enhancing Community Resilience

Promote Sustainable Practices

In 2023, Universiti Teknologi Malaysia (UTM) advanced its commitment to SDG 11, Sustainable Cities and Communities, by integrating sustainability principles across its operations. Guided by the UTM Sustainability Blueprint 2030 (UTMSB 2030) and the enVision UTM 2025 framework, UTM adopted a "Planetary Health" approach, promoting a zero-carbon identity, resilient ecosystems, and sustainable resource management. This initiative aligns with UTM's core values—Integrity, Synergy, Excellence, and Sustainability (ISES), introduced in 2018.

UTM's sustainability efforts focus on three pillars: environmental, social, and economic. Key initiatives include enhancing resource management, promoting green governance (ESG compliance), and fostering sustainable practices in university operations. In 2023, UTM also established strategic collaborations with local authorities and private organizations to address funding challenges, with contributions channeled into the UTM Sustainability Fund. Moreover, UTM plans to share sustainability models with other Malaysian universities, positioning itself as a leader in sustainable education and global outreach.

UTM's long-term goal is to embed sustainability as a core university culture, inspiring students and staff alike to carry forward these values into the workforce, thus fostering a future-oriented, sustainable society.

Initiative by the student society on recycling program at faculty.

The student society at Universiti Teknologi Malaysia (UTM) has initiated a recycling program at their faculty, aligning with Sustainable Development Goal 11 (SDG 11), which focuses on creating sustainable cities and communities. This initiative encourages students to actively participate in waste management by collecting and sorting recyclables, such as plastic bottles and paper, as seen in the images. The program aims to reduce waste generation and promote environmental awareness within the faculty, contributing to a cleaner and more sustainable campus environment. By fostering a culture of recycling, the initiative not only supports UTM's sustainability goals but also educates students on responsible waste disposal and the importance of sustainable urban living. This effort reflects SDG 11's objective of reducing the environmental impact of cities through improved waste management practices, ultimately contributing to the creation of more sustainable, resilient communities for future generations.

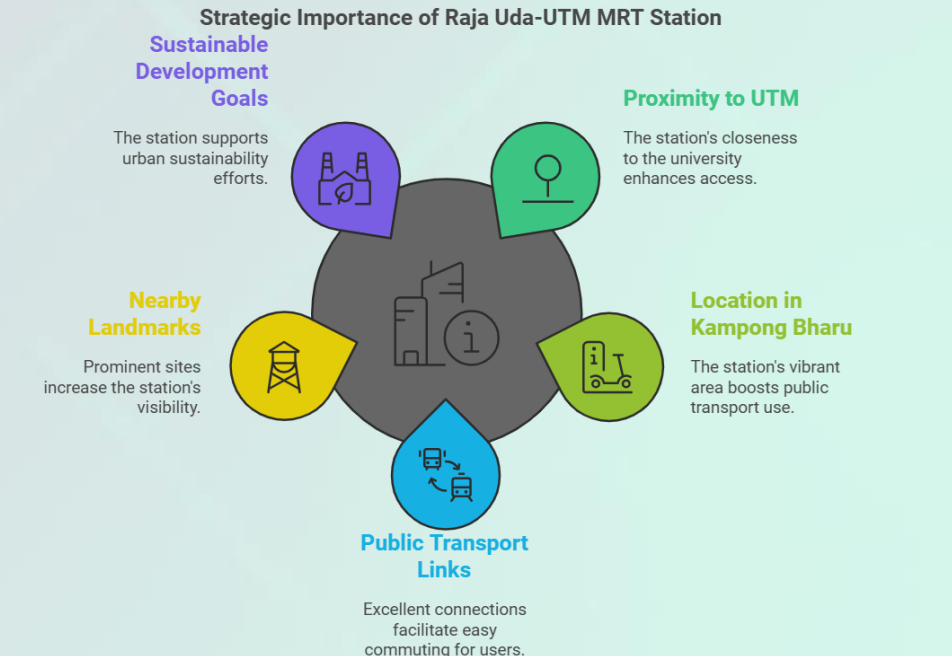# The Benefits of Remote Working for Sustainable Cities

Remote working, also known as telecommuting, has become a standard practice for many organisations, offering numerous benefits for both employees and employers. Beyond its immediate advantages, remote work plays a crucial role in promoting sustainability, particularly in urban environments.

One of the primary benefits of remote working is the reduction in commuting. Fewer daily commutes mean fewer cars on the road, which directly reduces traffic congestion and carbon emissions. This contributes to cleaner air and lessens the environmental footprint of cities, aligning with the goals of Sustainable Development Goal (SDG) 11: Sustainable Cities and Communities. By reducing pollution and energy consumption, remote work helps create healthier urban living conditions.

Moreover, remote work offers employees greater flexibility in managing their work-life balance. Without the need to commute, individuals can spend more time with their families or engage in personal activities, leading to improved mental health and overall well-being. This flexibility also allows companies to tap into a broader talent pool, including people from rural areas or those with disabilities who may find commuting challenging.

The selection of the Raja Uda-UTM MRT Station is not only due to its proximity, being just 1.3 km from Universiti Teknologi Malaysia (UTM) Kuala Lumpur, but also because of the visibility value the university hopes to achieve through this strategic location. Situated in Kampong Bharu, an area that is a major focal point for the general public and has good access to various public amenities, including buses and the Putrajaya Line (PYL) 12 MRT route, this station enhances accessibility for UTM students and staff while increasing the institution's visibility among the local community and visitors.

The strategic location near landmarks such as the National Heart Institute and the National Library of Malaysia not only facilitates access for UTM's community but also promotes the university as an easily accessible educational institution via public transport. This supports the sustainable urban development agenda (SDG 11) by encouraging the use of public transportation. Additionally, the presence of this MRT station reduces the need for private vehicle use, contributing to decreased traffic congestion and air pollution in urban areas. This aligns with SDG 11's goal to make cities more inclusive, safe, resilient, and sustainable.

Strategic Importance of Raja Uda-UTM MRT Station

Sustainable Development Goals
The station supports urban sustainability efforts.

Proximity to UTM
The station's closeness to the university enhances access.

Nearby Landmarks
Prominent sites increase the station's visibility.

Location in Kampong Bharu
The station's vibrant area boosts public transport use.

Public Transport Links
Excellent connections facilitate easy commuting for users.

12

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

RESPONSIBLE CONSUMPTION & PRODUCTION

UTM's Strategic Approach to SDG 12

UTM's strategy for advancing SDG 12 involves adopting sustainable practices across campus operations, incorporating sustainability into research and curriculum, and promoting awareness and action among students and staff. The university's approach includes resource efficiency, waste reduction, and fostering a culture of sustainability.

Strategic Objectives:

- **Enhancing Resource Efficiency:** Implementing practices to use resources more efficiently, including energy, water, and materials.

- **Reducing Waste:** Developing and implementing strategies to minimize waste generation and promote recycling and reuse.

- **Promoting Sustainable Practices:** Integrating sustainability into research, education, and campus operations to foster responsible consumption and production.

- **Raising Awareness:** Educating the university community about sustainable consumption and production and encouraging sustainable behaviors.

Waste Generation Statistics

The data indicates that a significant portion of the waste generated is not being recycled. With only 84.8 tons recycled out of 2945 tons generated, the recycling rate is approximately 2.88%. This low percentage suggests a need for enhanced recycling initiatives and public awareness campaigns to encourage better waste separation and recycling practices.

Additionally, the majority of the waste, totalling 2860 tons, is being sent to landfill. This raises concerns regarding environmental impact and sustainability. It is essential to explore alternative waste management solutions, such as composting, waste-to-energy technologies, and improved recycling programs, to reduce the amount of waste that ends up in landfills.

The current waste management statistics reveal a critical need for improvement in recycling efforts and waste reduction strategies. By focusing on increasing recycling rates and minimizing landfill contributions, we can work towards a more sustainable waste management system that benefits both the environment and the community.
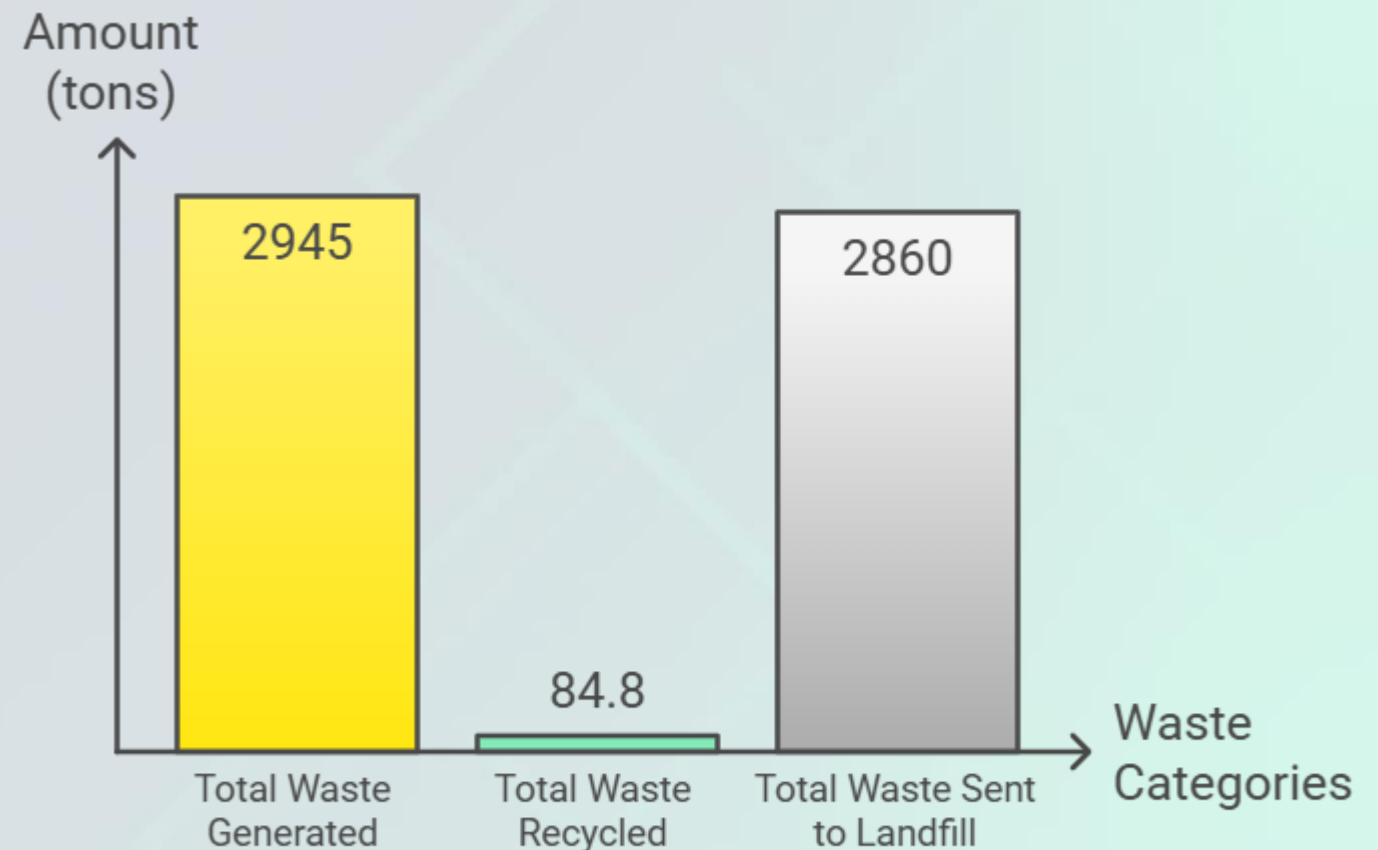
Waste Management Overview

Waste Recycling Statistics

- The predominant material collected in both series is **plastics**, which makes up **70.1%** of the total in Series 1 (**1,161.69 kg**) and **71.7%** in Series 2 (**823 kg**). This highlights that plastic waste remains a major issue.

- **Used cooking oil** was the second most collected material, contributing **17.6%** in Series 1 (**291.5 kg**) and **14%** in Series 2 (**161 kg**). This decrease indicates that less oil waste was collected in the second series.

- **Other materials**, such as **Cardboard/Paper** and **Metal**, have also been collected, though their quantities are significantly lower. In both series, **Cardboard/Paper** was more prominent in Series 2 at **10.6%** compared to **9.3%** in Series 1, suggesting an increase in paper waste collection.
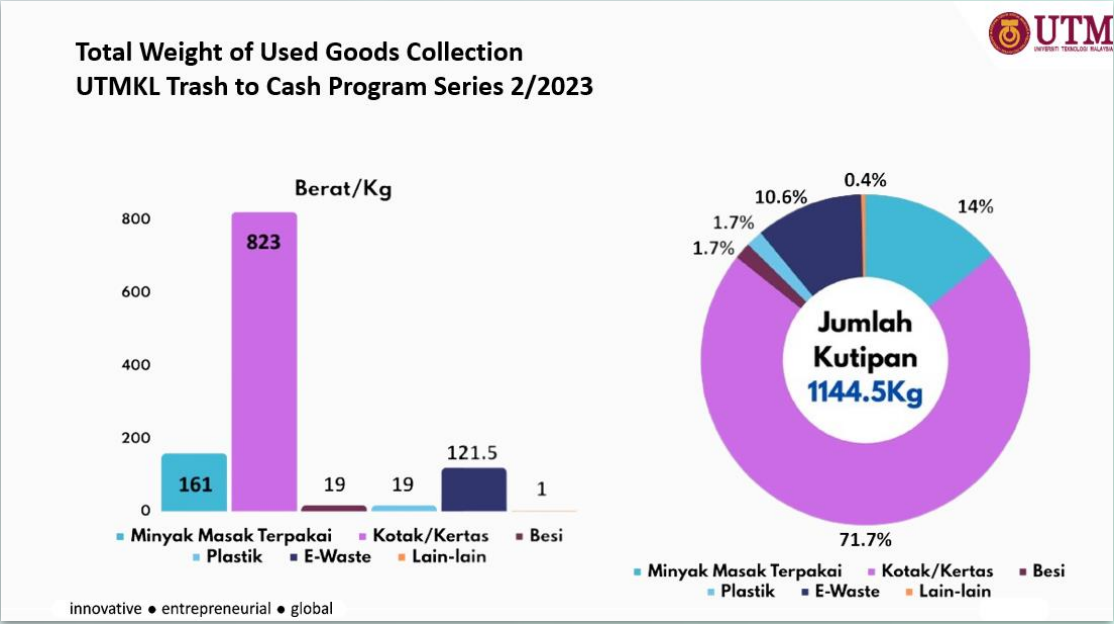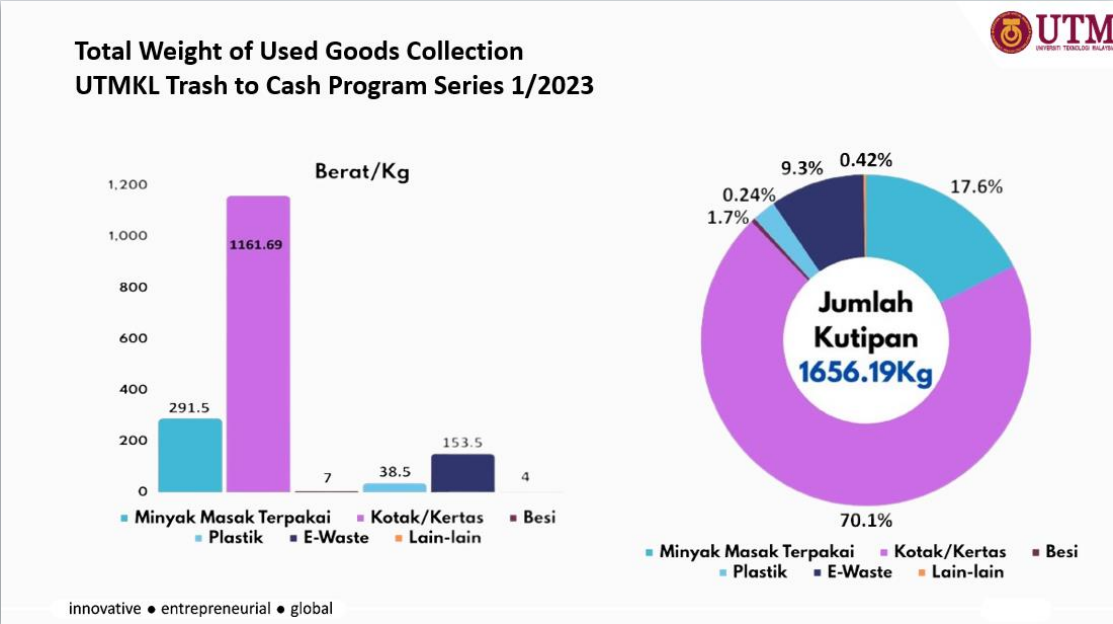
Fabric Waste Recycling Statistics

	Metric	UTM KL	UTM Skudai
1	Textiles Recycled (kg)	34556.58	34437.0
2	T-Shirts Diverted	207339.0	206622.0
3	CO2-e Avoided (kg)	77236.0	76969.0
4	Landfill Cost Savings (MYR)	5339.68	5321.21
5	GHG Emissions Avoided (days)	3678.0	3665.0
6	Equivalent Suitcases	1382.0	1377.0
7	Equivalent Fire Extinguishers (CO2)	38618.0	38485.0

Comparison of Environmental Impact: UTM KL vs. UTM Skudai

2
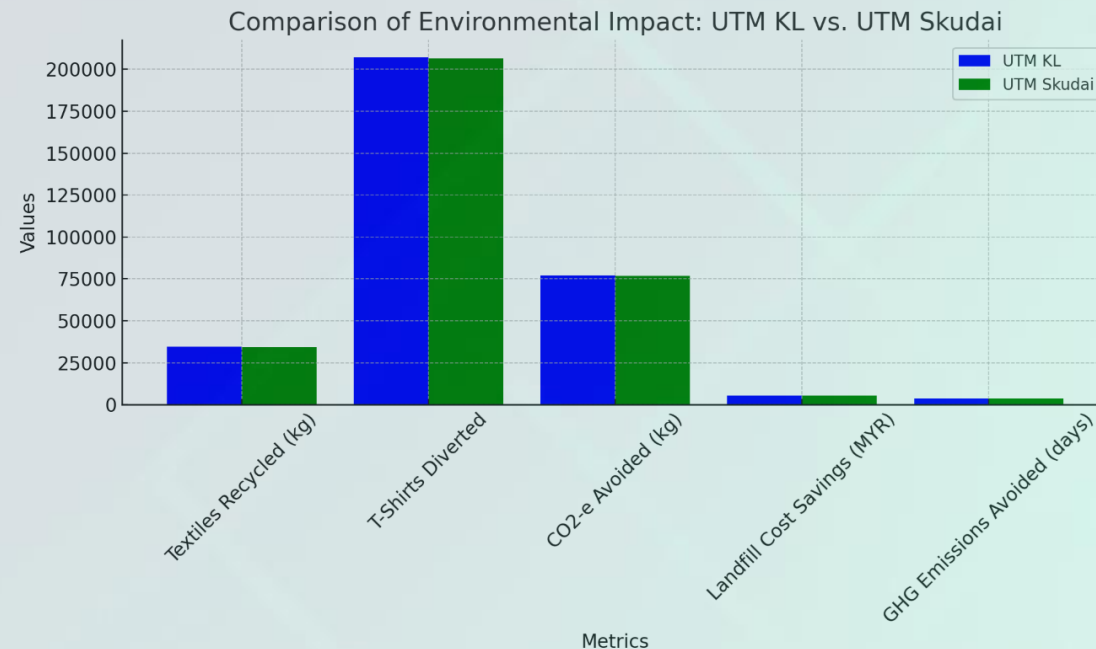
Rethinking the waste in our space

Solid waste management

Annual mass managed:
2,945 tonnes

Solid waste: 2,945 ton
1. Unrecyclable waste: 2,932 ton
2. Recyclable waste: 84.8 ton
3. Food waste: 9.7 ton

Waste contributed through landscaping works / maintenance: 9.7 ton – these are converted into organic waste on campus

Average expenditure/year:
RM 433,000
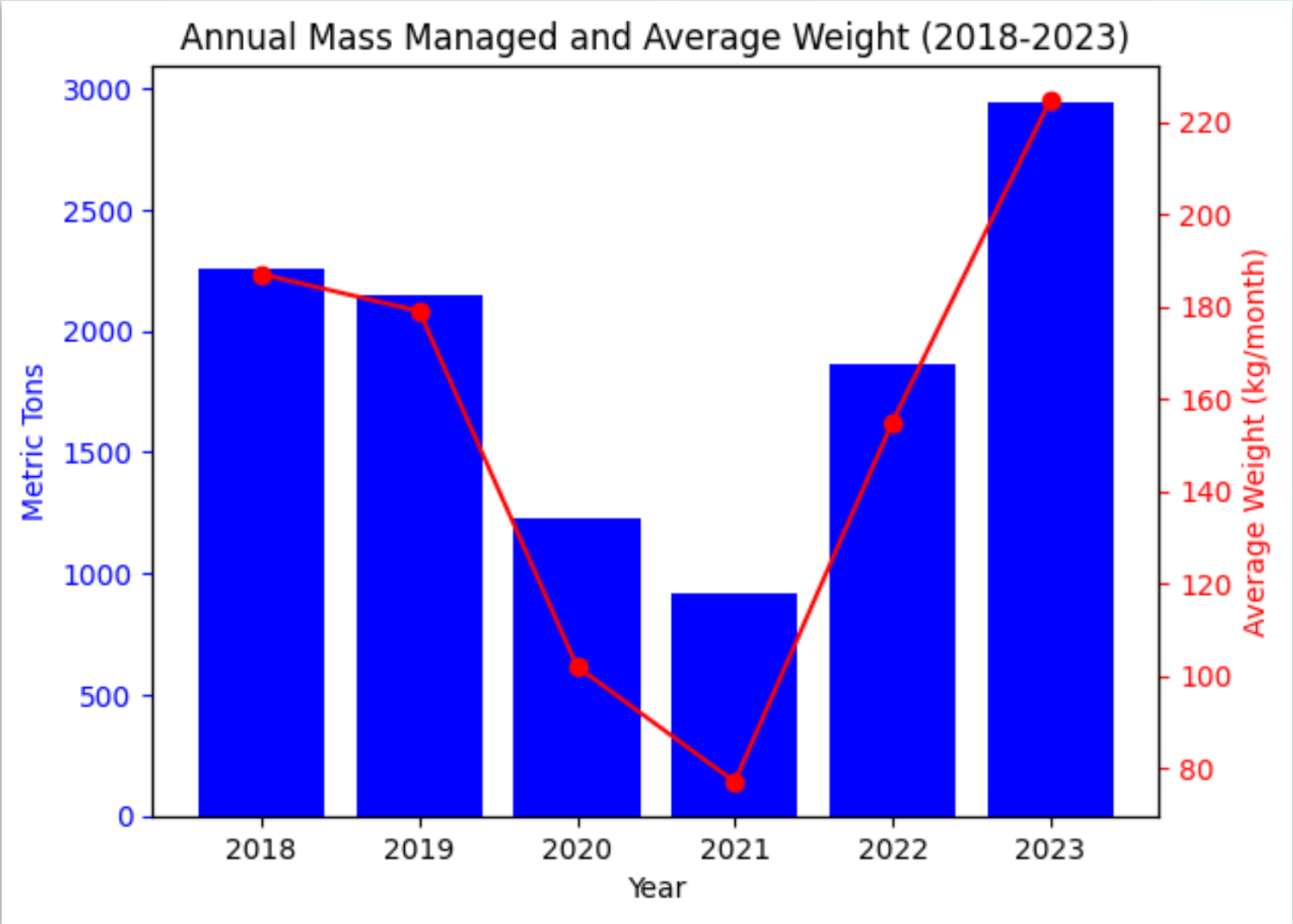
Data valid as at Dec 2023

13

CLIMATE ACTION

UTM's Strategic Approach to SDG 13

UTM's strategy for advancing SDG 13 involves integrating climate action into campus operations, research, and community engagement. The university's approach includes reducing greenhouse gas (GHG) emissions, promoting climate resilience, and fostering climate-related research and education.

Strategic Objectives:

- **Reducing Greenhouse Gas Emissions:** Implementing measures to reduce GHG emissions from campus operations, energy use, and transportation.

- **Enhancing Climate Resilience:** Developing and implementing strategies to increase resilience to climate impacts and support climate adaptation efforts.

- **Promoting Climate Research:** Conducting research on climate change and its impacts, and developing innovative solutions for climate mitigation and adaptation.

- **Educating the Community:** Raising awareness and providing education on climate change and climate action among students, staff, and the broader community.

CO2 Emissions and Reductions Overview by Year (2019 - 2023)

C02 EMISSIONS & REDUCTIONS (2019 - 2023)
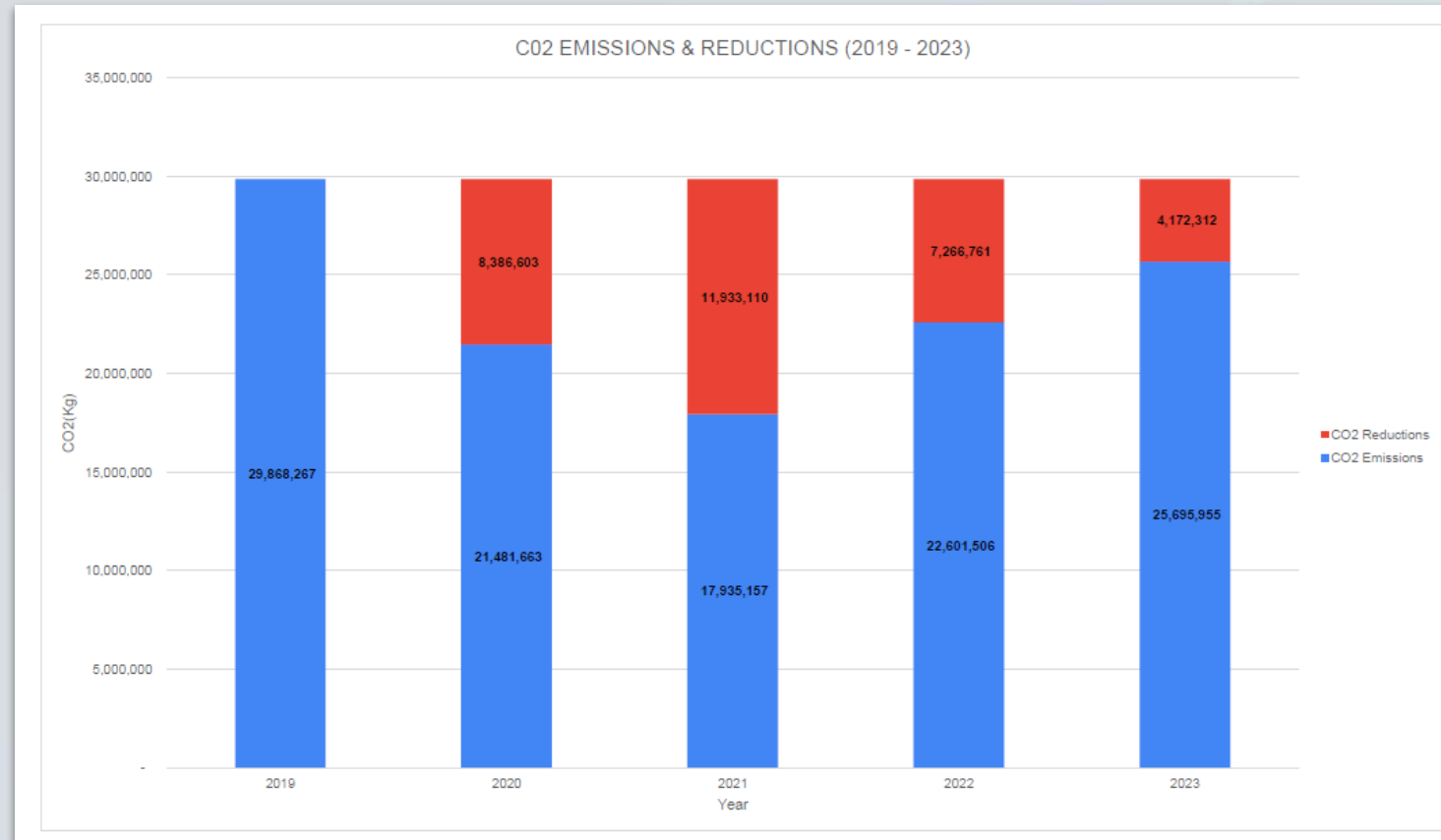
In line with Sustainable Development Goal 13 (SDG 13) on climate action, Universiti Teknologi Malaysia (UTM) has made significant efforts to reduce its carbon footprint and promote sustainability. One of the key initiatives is the reduction of CO2 emissions, where UTM has targeted a reduction of 35 million tons of CO2 from 2019 to 2023, as outlined in the attached report on "CO2 Emissions & Reductions". This ambitious goal is being achieved through a combination of energy efficiency measures, adoption of renewable energy, and sustainable campus operations.

UTM integrates climate change education into its curriculum and research programs, raising awareness and preparing future leaders to tackle environmental challenges. The university also focuses on adaptation measures, such as improving water management systems and expanding green spaces to mitigate the impacts of extreme weather events caused by climate change.

Educating the Community

The university offers courses and programs focused on climate change, sustainability, and environmental management, providing students with knowledge and skills to address climate challenges. Example of such programs is School Climate Education Program conducted by IPASA for primary and secondary schools in Johor Bahru and nearby districts. During 2023, IPASA have organized this program at three different schools in Johor Bahru and Kota Tinggi. The modules for this program designed to give the students' knowledge on both climate mitigation and adaptation, preparing the for future climate impacts.

14

LIFE BELOW WATER

UTM's Strategic Approach to SDG 14

UTM's strategy for advancing SDG 14 involves integrating marine conservation into research, education, and community outreach. The university's approach includes marine research, conservation projects, and collaboration with stakeholders to address marine challenges and promote sustainable practices.

Strategic Objectives:

- **Conducting Marine Research:** Supporting research on marine ecosystems, biodiversity, and environmental impacts to inform conservation efforts and policy development.

- **Promoting Marine Conservation:** Implementing and supporting initiatives to protect marine environments and reduce human impacts on oceans and seas.

- **Fostering Education and Awareness:** Educating the university community and the public about marine conservation issues and promoting sustainable practices.

- **Collaborating with Stakeholders:** Partnering with government agencies, NGOs, and other organizations to advance marine conservation goals and address marine challenges.

Supporting Aquatic Ecosystems through Education: A UTM Initiative

Community Engagement
- World Rivers Day 2023
- River Clean-Ups
- Awareness Campaigns

UTM's Aquatic Ecosystem Initiatives

Ecotourism and Sustainable Development
- Kampung Sungai Melayu
- Sustainable Tourism
- Biodiversity Education

Education and Participation
- SDG 14 Alignment
- Marine Pollution Reduction
- Ecosystem Protection

Universiti Teknologi Malaysia (UTM) actively supports Sustainable Development Goal (SDG) 14: Life Below Water through educational initiatives and community engagement, particularly with the Sungai Melayu and Sungai Pendas communities. A key example is the World Rivers Day 2023 celebration, where 200 participants from these communities took part in activities focused on river conservation, such as clean-ups and educational sessions. Organised by UTM's Campus Sustainability Office, the event aimed to raise awareness about protecting aquatic ecosystems from pollution and degradation.

UTM has also played a significant role in transforming Kampung Sungai Melayu into an ecotourism hub, promoting sustainable tourism while educating locals on the importance of preserving their natural resources. These efforts contribute to SDG 14 by reducing marine pollution, protecting aquatic biodiversity, and promoting the sustainable use of marine resources. By involving local communities in these initiatives, UTM ensures that conservation efforts are not only educational but also practical and long-lasting, fostering a culture of environmental stewardship that benefits both the environment and local economies.
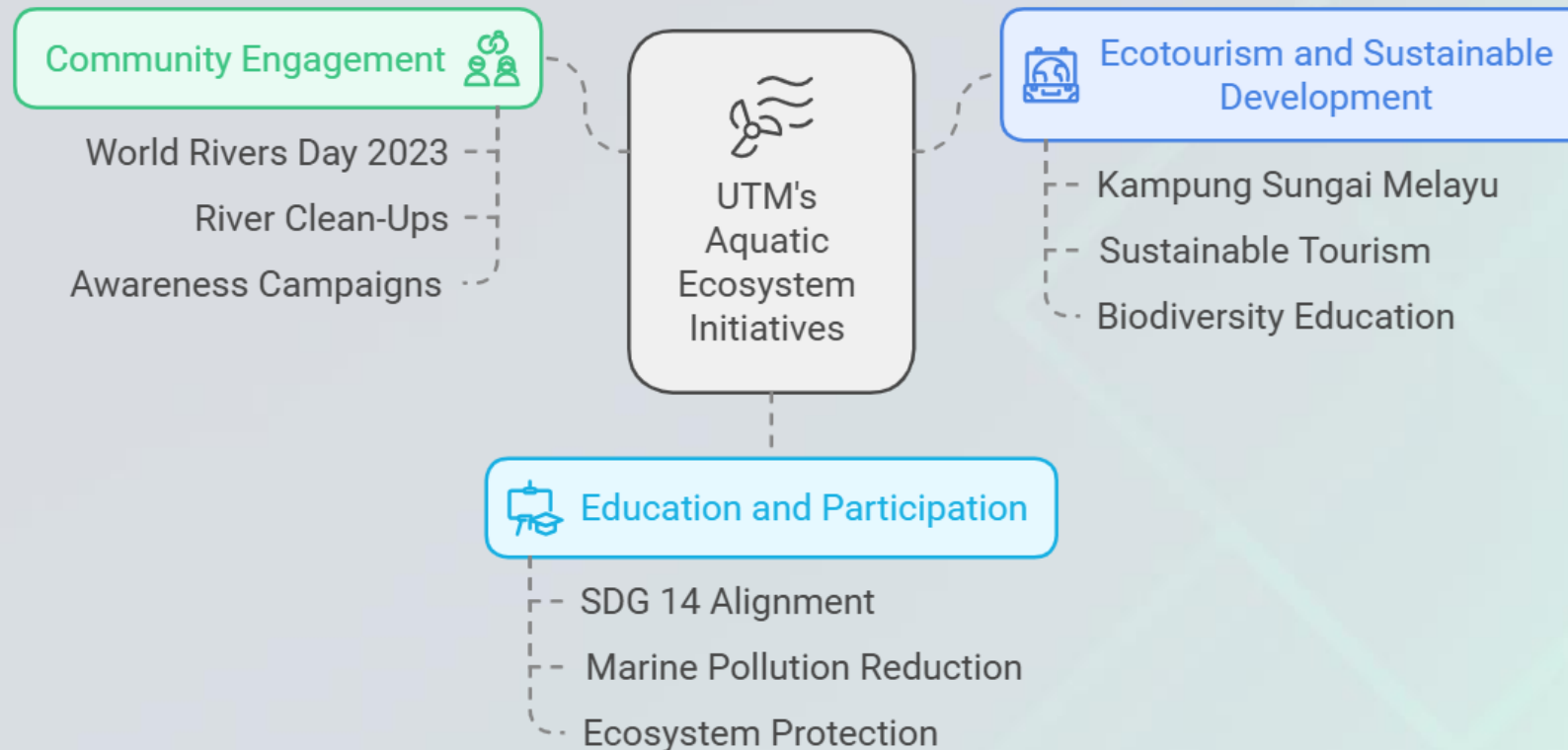
15

LIFE ON LAND

UTM's Strategic Approach to SDG 15

UTM's strategy for advancing SDG 15 involves integrating terrestrial conservation into research, education, and campus operations. The university's approach includes research on land management, conservation projects, and initiatives to promote sustainable land use practices.

Strategic Objectives:

- **Conducting Research on Terrestrial Ecosystems:** Supporting research on forest management, land degradation, and biodiversity to inform conservation efforts and policy development.

- **Promoting Land Conservation:** Implementing and supporting initiatives to protect and restore terrestrial ecosystems and manage land sustainably.

- **Fostering Education and Awareness:** Educating the university community and the public about terrestrial conservation issues and promoting sustainable land use practices.

- **Collaborating with Stakeholders:** Partnering with government agencies, NGOs, and other organizations to advance terrestrial conservation goals and address land management challenges.

UTM's Commitment to Sustainable Development Goal 15: Life on Land

In 2023, Universiti Teknologi Malaysia (UTM) has made remarkable progress in supporting Sustainable Development Goal (SDG) 15, which focuses on the protection, restoration, and sustainable use of terrestrial ecosystems. This document outlines UTM's key initiatives, including a large-scale mangrove planting project, collaborations with Tourism Malaysia for geoedutourism, and the UTM Berseri project aimed at enhancing the campus environment. These efforts not only contribute to environmental sustainability but also engage the community and promote awareness about the importance of biodiversity and ecosystem preservation.

UTM's Commitment to Environmental Sustainability

- Mangrove Planting Project
  - Combating Climate Change
  - Preventing Coastal Erosion
  - Preserving Biodiversity

- Collaboration with Tourism Malaysia
  - Educational Tourism Packages
  - Public Engagement

- UTM Berseri Project
  - Enhancing Landscape with Native Plants
  - Integrating Green Spaces into Education
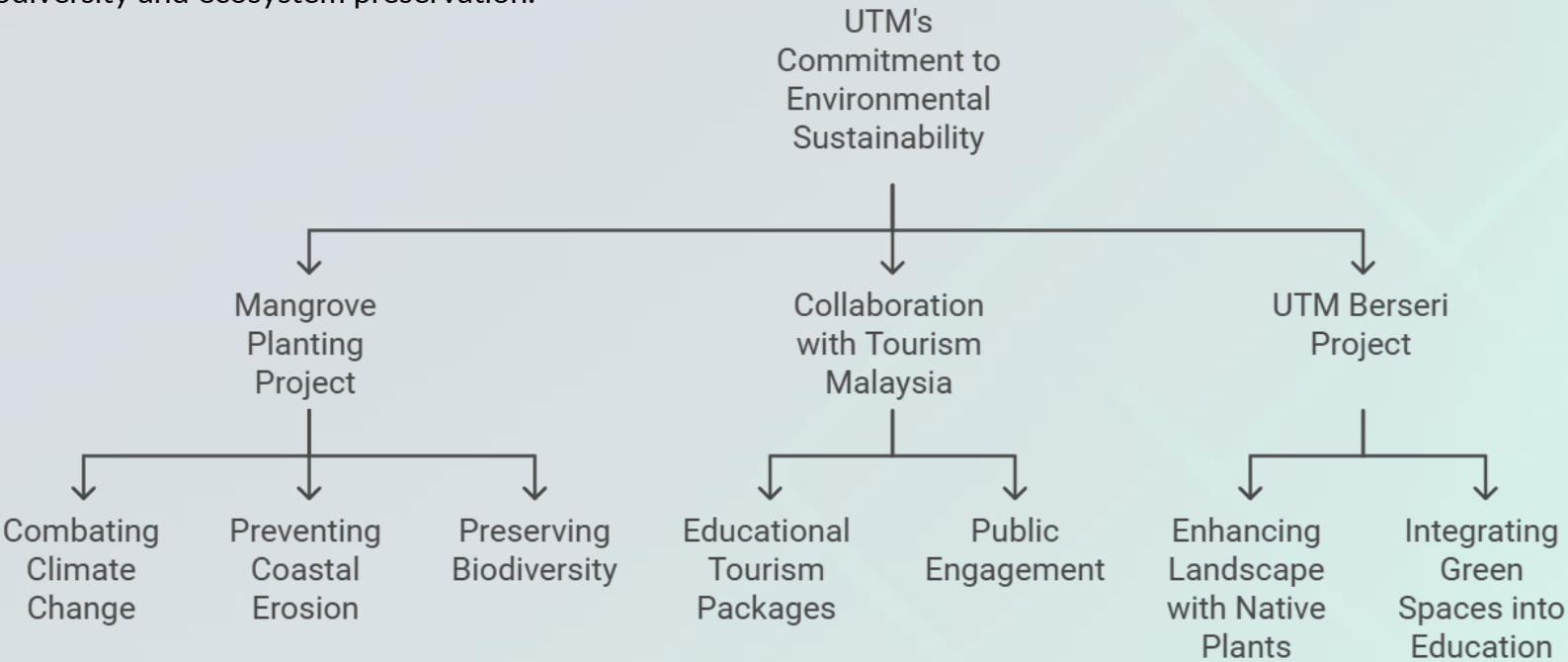
The "Right Tree at the Right Place" initiative, led by Professor Dr. Kasturi Devi Kanniah from UTM's Centre for Environmental Sustainability and Water Security (IPASA), is a significant effort to support Sustainable Development Goal (SDG) 15: Life on Land by promoting tree planting and environmental conservation in Pasir Gudang, Johor. The event, held on 17 September 2023, aimed to plant 500 trees to combat the rising temperatures in the area due to human activity and heavy vehicle movement. With support from CIMB Foundation and collaboration with local authorities such as Majlis Bandaraya Pasir Gudang (MBPG) and the Forest Research Institute Malaysia (FRIM), 350 trees were planted during the event, with more to follow.

The initiative involved local communities, schools, and UTM staff, educating participants on the importance of tree planting and long-term maintenance. A variety of tree species, including forest trees, ornamental plants, and fruit trees, were planted to enhance biodiversity. The GeoTree mobile app, developed by UTM's TropicalMap Research Group, was introduced to help participants document tree growth and contribute to a geodatabase for Pasir Gudang Municipality. This app allows users to track tree data in real time, aiding in efforts to mitigate climate change by assessing carbon capture and storage. Overall, this initiative not only supports ecosystem restoration but also raises public awareness about sustainable land management.

16

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

PEACE, JUSTICE & STRONG INSTITUIONS

UTM's Strategic Approach to SDG 16

UTM's strategy for advancing SDG 16 involves integrating principles of peace, justice, and institutional integrity into its operations, research, and community engagement. The university's approach includes promoting good governance practices, conducting research on justice and human rights, and fostering a culture of inclusivity and peace.

Strategic Objectives:

- **Promoting Good Governance:** Implementing practices and policies that ensure transparency, accountability, and ethical behavior in university operations and decision-making.

- **Supporting Justice and Human Rights:** Conducting research and promoting initiatives that support human rights, access to justice, and social equity.

- **Fostering Inclusivity and Peace:** Creating an inclusive and peaceful campus environment through policies, programs, and community engagement.

- **Strengthening Institutional Integrity:** Building effective, accountable, and inclusive institutional structures and processes.

Governance Measures at Universiti Teknologi Malaysia in Alignment with SDG 16

UTM Governance Structure

Student Participation

Encouraging student involvement enhances democratic governance.

Transparency and Integrity

Emphasizing ethical practices and regular audits builds trust.

Senate Role

The Senate's leadership fosters transparency and inclusivity in governance.

External Partnerships

Collaborations with stakeholders align UTM with global standards.

UTM Senate

UTM Senate comprises of Vice-Chancellor, all Deputy Vice-Chancellors, Pro-Vice-Chancellor, Campus Director, Deans of Faculties, Chairs, Engineering Professors, Science and Technology Professors, Built Environment and Social Sciences Professors, Co-Opted Professors, Ex-Officio, Co-Presenting Members, and Secretary

The membership of UTM Senate is inclusive and represents the whole spectrum of the university and not just the administrators

Link: https://www.utm.my/about/senate-members/

UTM Senate Hall

Student Participation
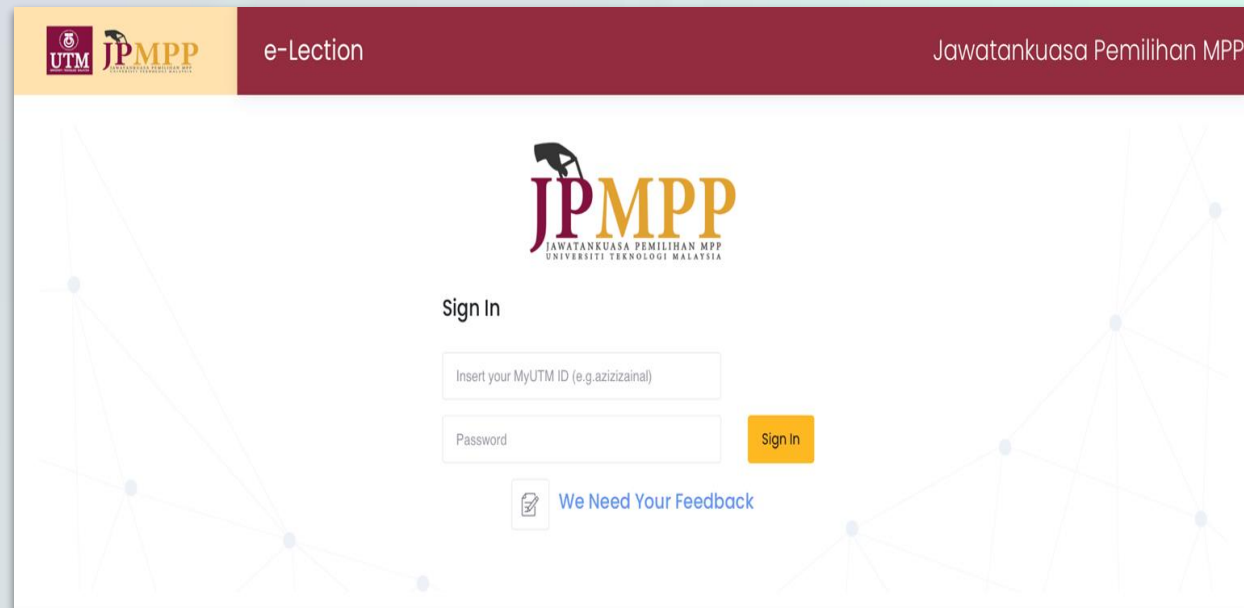
Student Representative Council (SRC) or *Majlis Perwakilan Pelajar* (MPP) is selected through student election

Election is conducted using a digital voting system called **e-lection**

Student election is managed by ***Jawatankuasa Pemilihan MPP UTM*** (Election Committee)

Link:

https://linktr.ee/JPMPPUTM?fbclid=IwY2xjawGT_eFleHRuA2FlbQIxMAABHfKMLhue06zqYyJmUmycUH684o5CCaVtB_hjtbqTaLx9zYv2BWKEufz5xQ_aem_eYFlLJMLo0V96rVn51cOcA

e-lection system (e-voting)

Enculturing Integrity & Transparency

Universiti Teknologi Malaysia (UTM) has shown a strong commitment to Sustainable Development Goal 16 (SDG 16), which focuses on promoting peace, justice, and strong institutions. SDG 16 aims to foster peaceful and inclusive societies, ensure access to justice for all, and build effective, accountable institutions SDG at all levels. UTM's efforts in this area are evident through its various initiatives and achievements.

In the 2023 Times Higher Education (THE) Impact Rankings, UTM secured a global ranking of 96 for SDG 16, reflecting its dedication to promoting justice and institutional integrity. This achievement highlights UTM's role in fostering an environment where transparency, accountability, and inclusivity are prioritized. The university's policies align with the core aspects of SDG 16 by creating a safe and supportive environment for students, staff, and the broader community. UTM actively engages in research and outreach programs that focus on reducing corruption, enhancing the rule of law, and promoting human rights.

UTM's commitment to SDG 16 is reinforced through events such as Fiesta ISES 2023. This event was designed to inculcate the university's core values—Integrity, Sustainability, Excellence, and Synergy (ISES)—among its community members. By engaging with external organizations like the Malaysian Anti-Corruption Commission (SPRM) and the National Anti-Drug Agency (AADK), UTM demonstrates its proactive stance in promoting ethical behavior and social responsibility. These activities contribute to building stronger institutions within the university while fostering a culture of peace and justice.

External Partnership

Faculty Technology and Informatics Razak (FTIR) has launched a Microcredential course on 5G Technology Fundamentals, marking a significant milestone in technology education. Led by Assoc. Prof. Dr. Rudzidatul Akmam, the course was developed through a collaborative effort with the Malaysian Communications and Multimedia Commission (MCMC). The course aims to equip learners with essential knowledge of 5G technology, empowering them to navigate and leverage its potential. The launch event celebrated the dedication of the FTIR team and their commitment to fostering innovation and advancing technology education in Malaysia.

This initiative aligns with UTM's (Universiti Teknologi Malaysia) commitment to fostering inclusive institutions that support learning and innovation. By providing accessible education on emerging technologies like 5G, UTM contributes to building strong institutions that can support the development of digital infrastructure and governance. Moreover, the collaboration between FTIR and MCMC exemplifies how partnerships can strengthen institutional frameworks, ensuring that technological advancements benefit society equitably. In this way, the course not only advances technology education but also supports the broader goals of peace, justice, and institutional integrity as outlined in SDG 16.
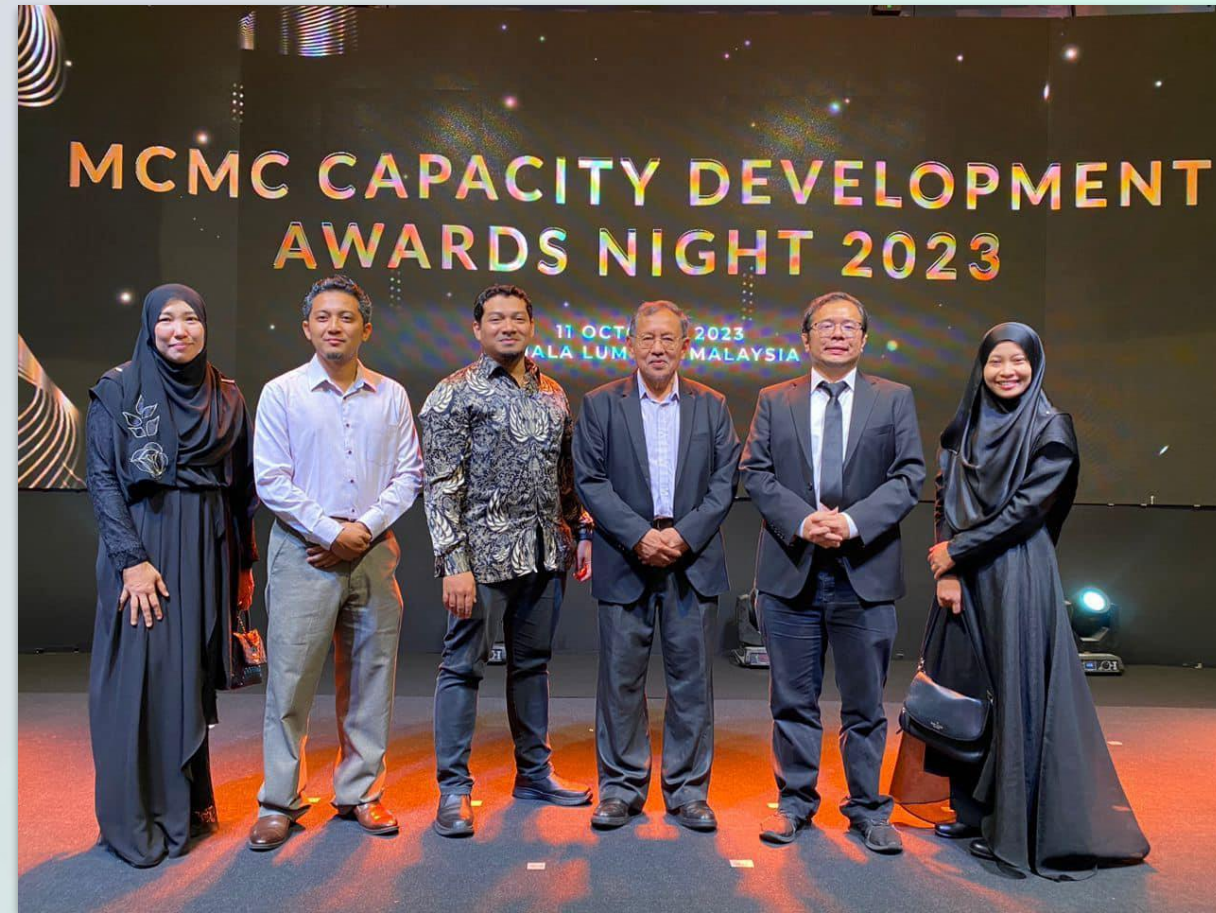
Microcredential Course on 5G Technology Fundamentals Launched in Malaysia

UTM's Strategic Approach to SDG 17

UTM's strategy for advancing SDG 17 involves fostering collaborative relationships with various stakeholders, including government agencies, non-governmental organizations (NGOs), industry partners, and academic institutions. The university's approach includes forming strategic alliances, participating in joint initiatives, and leveraging partnerships to support SDG implementation and achieve mutual goals.

Strategic Objectives:

- **Forming Strategic Alliances:** Establishing partnerships with key stakeholders to enhance collaboration and resource mobilization for SDG-related projects.

- **Participating in Joint Initiatives:** Engaging in joint initiatives and projects that address global challenges and contribute to the achievement of the SDGs.

- **Leveraging Expertise and Resources:** Utilizing the expertise and resources of partners to support research, innovation, and sustainable development efforts.

- **Promoting Knowledge Sharing:** Facilitating knowledge sharing and exchange of best practices among partners to advance SDG implementation and foster innovation.

SDG 17 and UTM's Collaborative Efforts in AI Education

Collaborative Efforts in AI Governance

SDG 17 Alignment

Alignment with Sustainable Development Goal 17 for global cooperation

UTM's Initiatives

UTM's proactive role in AI education and policy development

Industry Leaders

Engagement with industry partners to drive innovation

Government Bodies

Collaboration with governmental entities like MOSTI and MDEC

UTM Faculty of Artificial Intelligence (FAI) Establishment

The Prime Minister of Malaysia launched UTM FAI on 10 May 2024 at Kuala Lumpur World Trade Centre (WTC)

Link: https://www.thestar.com.my/news/nation/2024/05/11/utm-hosts-nations-first-ai-faculty

The Star — UTM hosts nation's first AI faculty

UTM hosts nation's first AI faculty

By REBECCA RAJAENDRAM

NATION

Saturday, 11 May 2024

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Charting a new course: Anwar with Zambry (left) and Japanese ambassador to Malaysia Takahashi Katsuhiko (second left) visiting a booth at the launch of the Malaysia Artificial Intelligence Nexus programme at the World Trade Centre Kuala Lumpur. — Bernama

Both training programs are integral to fostering a culture of sustainability within the organization. By participating in these sessions, staff members will not only enhance their understanding of the SDGs but also learn how to implement these principles in their professional and personal lives. The online format ensures that all staff can participate, promoting inclusivity and engagement in the organization's values training initiative.

Sustainability Training Programs

Inclusivity

Ensures all staff can participate in training sessions.

SDG Understanding

Enhances staff knowledge of Sustainable Development Goals.

Implementation Skills

Equips staff to apply sustainability principles effectively.

Engagement with stakeholders
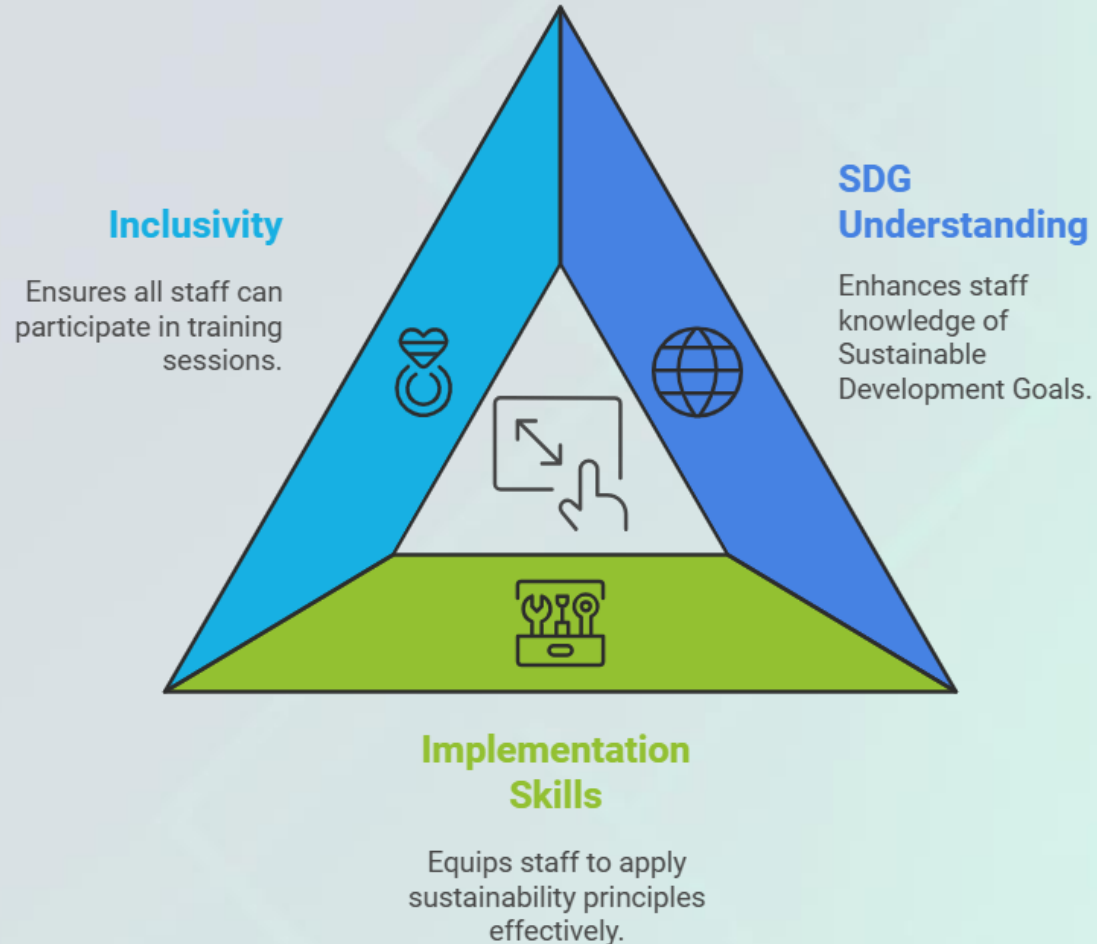
Universiti Teknologi Malaysia (UTM) is actively contributing to Sustainable Development Goal 17 (SDG 17), which focuses on strengthening global partnerships for sustainable development. UTM's initiatives align with SDG 17 by fostering strategic collaborations and knowledge sharing, particularly in technology and innovation.

One significant effort is the partnership between UTM and Universiti Malaysia Sabah (UMS) to enhance artificial intelligence (AI) capabilities and sustainability practices. This collaboration aims to accelerate AI adoption across various sectors in Malaysia, reflecting the goal's emphasis on technology and capacity building.

Through joint research projects, skill enhancement programs, and educational initiatives, UTM and UMS are working together to address ethical considerations in AI development and promote sustainable campus practices

UTM's involvement in the AIMS4STAR Consortium exemplifies its commitment to multi-stakeholder partnerships. This consortium integrates academia, industry, government, and society to drive transformative research and innovation. By advancing the Quadruple Helix model towards a Quintuple Helix framework, UTM is enhancing collaborative efforts that support sustainable development goals

Moonshot 2.0
Research impact

1 Pre-commercialization of UTM technology

2 Collaborative Novel Knowledge Exploration

3 Strengthening Quadruple Helix; Advancing towards Quintuple Helix

4 Innovation at all levels

AIMS4STAR CONSORTIUM
CONSORTIUM OF ACADEMIA INDUSTRY GOVERMENT SOCIETY FOR SYNERGETIC TRANSFORMATION

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 SDGs development model to fulfil local needs.

i. Practicing sustainable building design and infrastructure through a clear development framework to cost effectiveness.

i. Optimising University asset management and sustainable business opportunities to attain greater cost efficiency.

i. Managing talent towards skills increment and effectiveness to support SGDs implementation.

i. Managing finance sustainably and plan funding allocation for seamless policy implementation.

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

i. Minimising waste generation and pollution through effective waste management.

i. Eliminating food packaging that are not biodegradable through Zero Single-use Plastic Campus initiative.

ix. Maximising organic solid waste usage through Waste-to-Wealth and Fork-to-Farm initiatives;

ix. Conserving water body/source, enrich biodiversity, and encourage environmental control and protection activities.

ix. Maintaining balance between developed and green areas to achieve sustainable campus ecosystem.

ix. Enculturating low carbon practices among campus community by planning a carbon elimination roadmap.

ix. Empowering public transportation system in campus to reduce the use of motorised vehicles.

ix. Promoting community spirit, increase quality of life, and responsive to local and global contexts in upholding aspirations on sustainability.

ix. Instilling integrity and ethical values through volunteerism and continuous engagement with all members of the society.

ix. Creating a culture of healthy lifestyle and nurture spiritual wellness 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.

4

WAY FORWARD

How to enhance sustainability practices at UTM?

Strengthen Institutional Governance & ESG

Establish a Sustainability Council and implement sustainability reporting.

Enhance Campus Operations

Set carbon neutrality goals, promote sustainable transportation, and retrofit green buildings.

Integrate Sustainability into Education

Expand sustainability curriculum, increase research funding, and utilize campus as a living lab.

Universiti Teknologi Malaysia (UTM) is advancing its Environmental, Social, and Governance (ESG) agenda through the UTM Action Plan 2024-2025, part of the broader UTM Sustainability Blueprint 2030. This plan emphasizes integrating ESG principles into the university's operations, research, and educational programs.

Key Initiatives: Pre-commercialization of Technology: UTM is focusing on bringing its technologies to market, enhancing innovation and sustainability impacts.

- Collaborative Knowledge Exploration: By fostering partnerships globally, UTM aims to drive novel research that aligns with ESG principles.
- Strengthening Helix Models: Transitioning from a Quadruple Helix to a Quintuple Helix model, UTM is enhancing collaboration among academia, industry, government, and society to address sustainability challenges.
- Innovation at All Levels: Encouraging innovation throughout the institution to support sustainable practices and solutions.

ESG Integration Strategies: Curriculum Development: Incorporating ESG topics into educational programs to prepare students for future sustainability challenges.

- Campus Operations: Implementing sustainable practices such as energy efficiency and waste reduction on campus.
- Stakeholder Engagement: Collaborating with external partners to enhance ESG education and initiatives.
- Through these efforts, UTM is committed to fostering a sustainable future by embedding ESG principles into its core activities, thereby contributing significantly to global sustainability goals.

Understanding ESG Evaluations: Key Components

ESG Evaluation Framework

Social Factors

Evaluates a company's commitment to social justice, employee rights, and community impact.

Environmental Factors

Focuses on a company's impact on the environment through resource management and emissions.

Governance Factors

Assesses corporate governance practices, including ethics, compliance, and board independence.

WHY UTM NEED ESG?

Long Term Sustainability
Ecosystem
Resilience for Planetary Health

Innovative Research & Education (R&E)
Interdisciplinary R&E among future leaders / stakeholders

Natural Resource Management
Measure and manage (energy, water, land, biodiversity)

Social Responsibility
Measure **Impact** on society

Ethical Leadership
Ethical behavior, **responsible decision making** & sustainable practices

Stakeholders Expectations
Maintain positive relationships with stakeholders

Branding & Reputation
Enhance UTM recognition, visibility, enrollment, & collaboration opportunities.

Risk Management
Mitigate risks related to **Reputational damage, regulatory compliance** & financial stability.

Funding & Investment
Attract Fundings & **Strategic Partnerships (Private & Regional)**

- **Integrity** - **Accountability** - **Transparency**

The 17 SDGs

The University Plan

enVision UTM 2025 Strategic Plan

envision UTM + Moonshot of UTM + UTMSB 2030 + Action Plan 2024-2025

Our National and Global Alignment

BURSA MALAYSIA | United Nations Global Compact | GRI Global Reporting Initiative | TCFD Task Force Climate-related Financial Disclosures | SUSTAINABLE DEVELOPMENT GOALS

E	S	G
Focuses on how the university manages its impact on the environment and natural resources	Evaluating the university's relationships, well-being with its various stakeholders and its impact on society.	The internal structures and processes that guide decision-making and management within the university

Our Stakeholders

INTERNAL
- Board of Directors
- Staff - Students
- University Senate

EXTERNAL
- Local Community
- Ministry of Higher Education (MOHE)
- Ministry of Finance (MOF)
- Alumni
- Local Authority
- Service provider
- Industry
- NGOs
- Local Suppliers

UTM as GREEN JOB PROVIDERS / SOLUTION (Talents & Resources)

STAKEHOLDER PRIORITISATION (UTM)
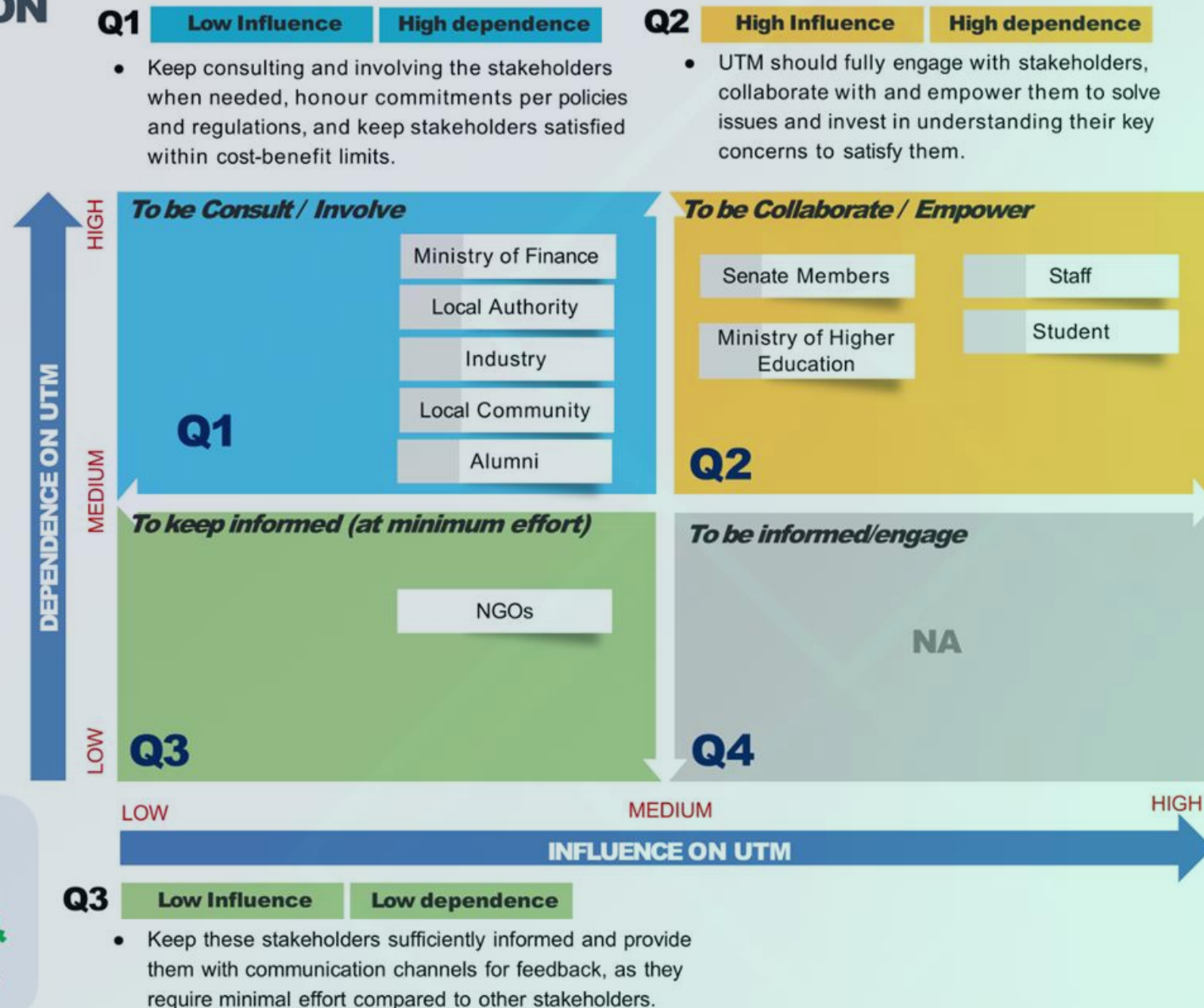
Influence- Dependency Matrix

- A stakeholder's position on the quadrant determines the level of engagement.
- Consequences of Non-Compliance to the Matrix :Lack of Implementation of University's Strategy towards ESG Commitments

HOW WE CAN IMPROVE?

Stakeholder Engagement Process

- Engagement Strategy and Planning
- Communicating and Method of Dissemination
- Monitoring and Reflection

The engagement will support UTM's **STRATEGIC PLANNING, OPERATIONAL MANAGEMENT & CAPITAL INVESTMENT** decisions

---

Q1 | Low Influence | High dependence

- Keep consulting and involving the stakeholders when needed, honour commitments per policies and regulations, and keep stakeholders satisfied within cost-benefit limits.

Q2 | High Influence | High dependence

- UTM should fully engage with stakeholders, collaborate with and empower them to solve issues and invest in understanding their key concerns to satisfy them.

DEPENDENCE ON UTM (HIGH / MEDIUM / LOW)

To be Consult / Involve

Q1
- Ministry of Finance
- Local Authority
- Industry
- Local Community
- Alumni

To be Collaborate / Empower

Q2
- Senate Members
- Staff
- Ministry of Higher Education
- Student

To keep informed (at minimum effort)

Q3
- NGOs

To be informed/engage

Q4
- NA

INFLUENCE ON UTM (LOW / MEDIUM / HIGH)

Q3 | Low Influence | Low dependence

- Keep these stakeholders sufficiently informed and provide them with communication channels for feedback, as they require minimal effort compared to other stakeholders.

UTM MATERIALITY ASSESSMENT

Identified Sustainability Matters

Environmental
- Energy Management
- Water Management
- Sustainable Transportation
- Waste Management
- Sustainable Food
- Emission Management
- Land and Biodiversity

Social
- Diversity and Inclusion
- Access and Affordability
- Community Engagement
- Health and Safety
- Human Rights
- Cultural Heritage

Governance
- Board of Governance
- Ethical Conduct
- Stakeholder Engagement
- Risk Management
- Resource Sustainability (Human & Financial)
- Strategic Partnerships

BUSINESS RESILIENCE and also PERFORMANCE in the SHORT-, MEDIUM- and LONG-TERM

Pre-results and Pre-findings

- 379 responses from the online survey to all identified stakeholders

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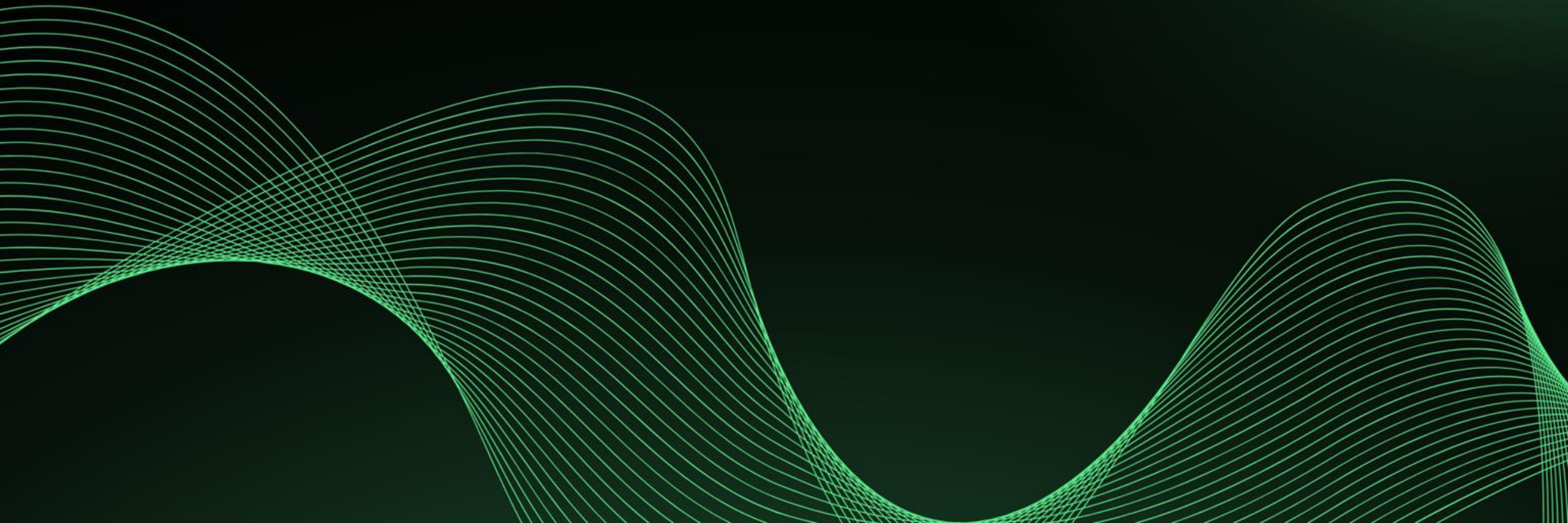
Design notes

Visuals

SDG logos, miscellaneous: Refer UN SDG Guidelines at
https://www.un.org/sustainabledevelopment/news/communications-material/

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Thank you!

UTM Campus Sustainability

Mohd Fadhil Md Din | Zanariah Jasmani | Shamsul Sarip | Kiflee Jimpi | Muhamad Hairunizam Ishak | Sabrina Zainal Abidin| Mohd Hafizan Hamzah | Nurulhuda Radznam | Zainal Affandi Zainal Abidin | Jani Akmal Jaapar

UTM community – key resource person (data collection)

Nur Hakimi Karsono | Chew Teong Han | Siti Nurhafizah Soid | Rohaizan Khairul Anuar | Kogila Vani A/p Annammala | Jasrul Jamani Jamian | Norliza Abd Rahim | Abdul Rashid Husain | Amiruldin Abdul Aziz | Nur I'zzati Adnan | Ho Wai Shin | Lim Jeng Shiun | Norlita Hassan | Arina Syairah Maslani | Huszalina Hussin | Naemah Hamzah | Syafiqah Saidin | Nur Shafira Husna Mazlan | Aimi Aqilah Azman | Juhaizah Talib @ Harun | Hanifah Ahmad | Intan Shahnaz Zulkifli | Nurulhuda Abu Talib | Ahmad Adli Ghazali | Mohd Fauzi Abd Rahman | Amirul Shahrin Amir | Nazratul Hazirah Rushdan | Haliza Abdul Hamid | Mohd Subha Salleh | Mahfuzah Ra'aini Muhammad | Norhafizah Mohd Hanapiah | Haliza Abdul Hamid | Hartini Darsono | Nornazura Isnin | Zuridah Saadan | Suzila Mat Yassin | Mohd Shahril Abdul Rahman | Norahim Ibrahim | Hadafi Fitri Mohd Latip | Norafitri Buradi | Zafarina Dol | Ahmad Adli Ghazali | Ida Shazreen Omar | Qamaruzaman Mohd Noor | Mohd Izan Zharif Kamarudin | Afiq Faiz Nordin | Mazlyna Rosly | Yulie Nurafnie Abd Majid | Nur Suhaila Mohd Norddin | Rosnizam Maarof | Mohamad Fitri Khamis @ Subari | Nurul Nazihah Ismail | Nuril Aini Ahmad Tohid | Nur'aina Osman | Zalina Pareng | Mohd Sofri Ibrahim | Mohd Farid Rahmat

SDG Writing Experts

Shamsul Sarip | Zanariah Jasmani | Ahmad Jusoh | Zainura Zainon Noor | Adaviah Mas`Od | Nur Husna Abd. Wahid | Wan Nurul Mardiah Wan Mohd Rani | Pramila A/P Tamunaidu | Rohaizan Khairul Anuar | Muhammad Abd Hadi Bunyamin | Ho Wai Shin | Lim Jeng Shiun | Rafidah Othman | Nur Azam Anuarul Perai | Zaidah Rahmat | Jasrul Jamani Jamian | Kogila Vani A/P Annammala | Ezza Syuhada Sazali

Typeset and design

Shamsul Sarip | shamsuls.kl@utm.my

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