# UTM SUSTAINABILITY BLUEPRINT 2030

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This blueprint is dedicated to all UTM citizens

who have passionately charted a course for the university's sustainability

as well as students, staff, alumni and collaborators across the country and beyond.

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

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# Foreword

Thriving towards sustainable impact, UTM has established a holistic and conducive innovation ecosystem in which academia, industries, communities, and government agencies can co-create, co-develop, and actively participate in finding innovative solutions to challenges that impede our nation-building.

In line with the new UTM tagline *Innovating Solutions*, it reflects UTM's aspiration to become a premier university providing world-class education and research in 2025, particularly in providing innovative solutions by developing and inventing unique and value-added approaches to overcoming challenges faced by the staff, students, and community at large.

UTM also believes that sustainability is a significant agenda to uphold, as stated in its core values; Integrity, Synergy, Excellence and Sustainability (ISES). The success of the sustainability strategy requires a new approach to support ESG (Environment, Social, and Governance). Hence, this blueprint comprises goals and objectives that will drive the UTM community to embrace sustainability as a lifestyle.

Six strategic priority areas (SPAs) were placed in the major key results to work towards *Net Zero Carbon Campus*, *Ecosystem Resilience*, *Sustainable Production and Responsible Consumption*, *Health and Well-Being*, *SDGs Localisation*, and *Networking and Partnership*. These primary areas have been meticulously considered to improve the sustainability action plan of UTM *en*Vision 2025 in providing a healthy campus experience.

**Prof. Datuk Ir. Ts. Dr. Ahmad Fauzi bin Ismail, 7th UTM Vice Chancellor**

# Foreword

It is with much pride for me to share UTM Blueprint with the world. This Blueprint is ten years in the making, and we are still working hard towards achieving sustainability to create a better Planet for our new generation and time continuum.

UTM has been working hard through a robust agenda to create awareness and implement sustainability within UTM, as well the canvas of governance and remarkable UTM's core-values. The idea is that this Blueprint would be able to educate the citizen of UTM, so they not only appreciate and learn about the plan of sustainability but also spearhead those understanding to their daily life, as the DNA of UTM. To achieve this, the university's governance needs to be strengthened through various efforts on all levels of management, including PTJs, staff and our stakeholders, the students. With this Blueprint's existence, UTM's citizens will genuinely recognize the vision and goal of sustainability to be practised and executed in teaching & learning, research and community services, academic value-added and further services, and management in UTM.
Sustainability is not focusing only on the environmental issue. The importance of sustainability is essential to empower new knowledge. We will be looking at Key Activity Indicators (KAI) to achieve this as the accelerator and motivation tools. Beyond the tangible KAI, numerous effort and selective processes will help in determining the performance of the programme driven by sustainability.

The production of this Blueprint will brand UTM to be the institution to empower sustainability and contribute to all the SDGs indeed. This continuous effort could be the model for other universities to follow suit with the expectation of alteration made to fit the nature of the environment.

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

# Foreword

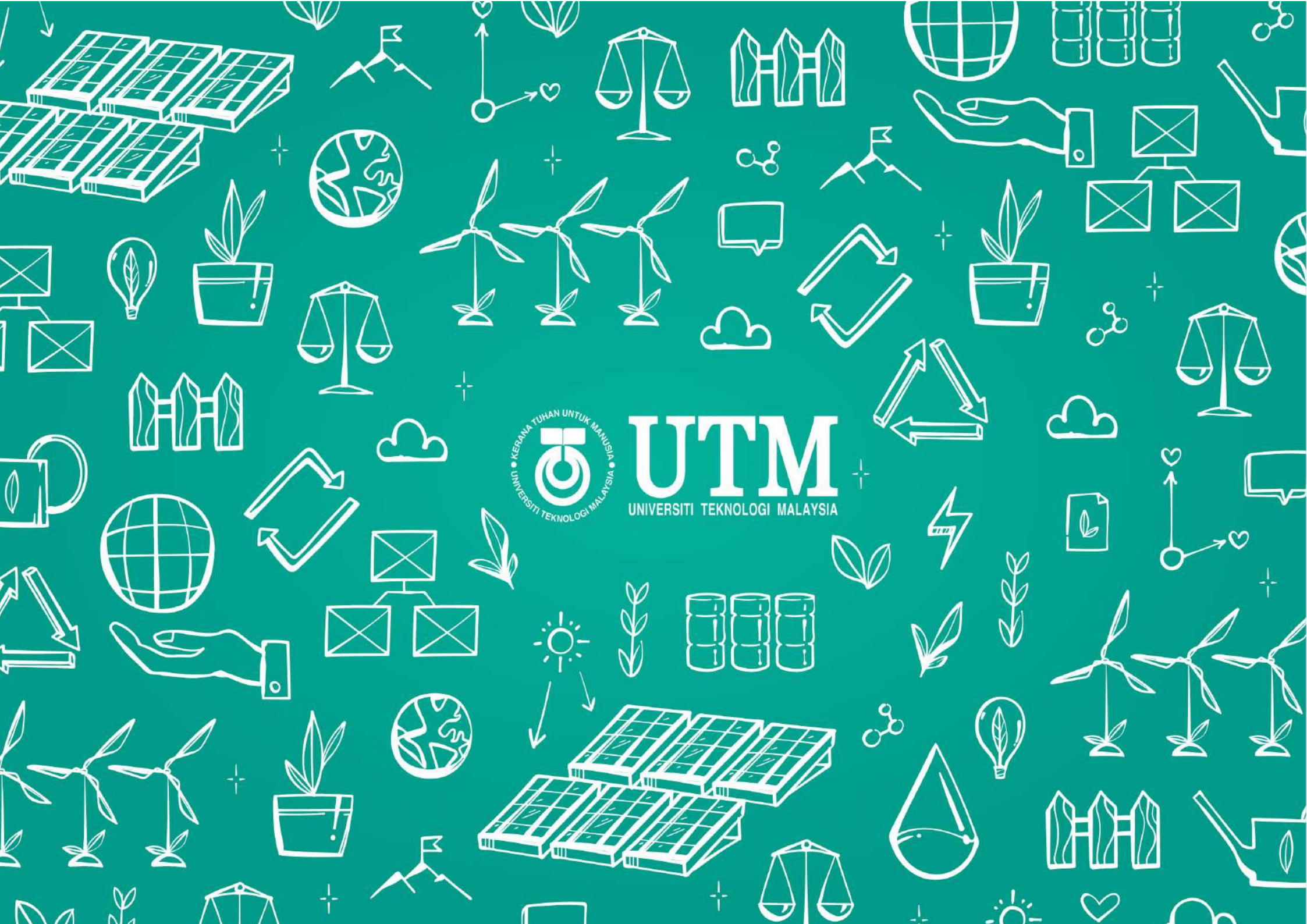
In 2015, United Nations General Assembly in September 2015 adopted the 2030 Agenda for Sustainable Development Goals (SDGs). It is for first time at that level, the role of science, technology and innovation has been clearly recognized as an important driver of sustainability. Sustainability will depend on the capacity of institutions to put science and technology at the heart of their national strategies for development, strengthening capabilities and investment to overcome challenges, some of which are still unknow particularly after this post-Covid 19.

In order to provide clear direction and contribute significantly in building a sustainable campus, the UTM CS takes up the challenge in developing The UTM Campus Sustainability Blueprint 2023-2030. The development of this Blueprint is unique in providing such a clear vision and strategic initiatives of UTM CS landscape, reflects the contribution of sustainable experts coming from various faculties and departments work as ONE UTM over a period of 10 months.

This Blueprint sets forth an ambitious set of strategic initiatives that will advance the sustainability of our university. Implementing this Blueprint will further sustainability while also contributing toward the pathway to the future UTM envision 2025. This is a plan for the entire university community and everyone can help make a difference towards a more sustainable campus. Subsequently, at the heart of UTM's success has always been the smart partnership that have been natured, build and reinforced, particularly with the academia, students, government agencies, research institutes, public and private universities, technopreneurs, industries, communities as well as environment in other words has successfully adopted Quintuple Helix approach.

I would like to take this opportunity to congratulate UTM CS and thanks each of the head of SPA and all taskforce committee members for their determination and endless contributions towards the development of this Blueprint. Hence it is my sincere hope it also provides clear direction which help the citizens in building a sustainable UTM.

**Assoc. Prof. Dr. Aini Suzana Ariffin, Advisor**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# Foreword by SPA Leaders

**SPA 1**
**NET ZERO CARBON CAMPUS**

*"This plan should assist UTM in achieving net zero carbon emissions within the next five years. It will assist the country in meeting its goal of becoming carbon neutral by 2050. As a result, UTM is at the forefront of the net zero movement in higher education. It will also encourage local governments, businesses, and communities to reduce their carbon footprint. This blueprint was created by bringing together people with diverse backgrounds and talents. It was a fascinating and exciting project. During the sessions, we pushed each other and tweaked our SPA. The hard work has paid off."*

**Assoc. Prof. Ir. Dr. Lim Jeng Shiun**

Lead Contributors: Prof. Ts. Ir. Dr. Sharifah Rafidah Bt. Wan Alwi | Prof. Kasturi Devi A/P Kanniah | Assoc. Prof. Dr. Jasrul Jamani Bin Jamian | Assoc. Prof. Dr. Mohd Farid Bin Muhamad Said | Dr. Noor Aimran Bin Samsudin | Lar. Dr. Zanariah bte Jasmani | Dr. Nurul Hawani bte Idris | Dr. Eeydzah Binti Aminudin | Ir. Norhashimah Binti Hashim | Noor 'Azlinda Binti Maskor | Ahmad Safarin Bin Masri

**SPA 2**
**ECOSYSTEM RESILIENCE**

*"This blueprint is vital in leveraging our natural resources to improve preparedness and resilience, to secure resources and increase rate and to establish conservation, research, and education. It is hoped that this initiative can make the UTM Ecosystem an example to external agencies as The Most Environmentally Sustainable Institution. Despite all the challenges, we have completed the Ecosystem Resilience. Thank you to the UTMCS Team for all the input, feedbacks, and comments. A satisfying process that makes us all proud to be able to contribute to UTM."*

**Dr. Mohd Farizal Bin Ahmad Kamaroddin**

Lead Contributors: Prof. Dr. Azmi Bin Aris | Prof. Madya Dr. Ir. Zair Asrar Bin Ahmad | Prof. Madya Sallehuddin Bin Muhamad | Ir. Dr. Mokhtar Bin Harun | Dr. Nadirah Binti Darus | Dr. Ak Mohd Rafiq Bin Ak Matusin | Encik Mohd Ishamuddin Bin Md Kusmin

**SPA 3**
**SUSTAINABLE PRODUCTION & RESPONSIBLE CONSUMPTION**

*"This is a collective effort to have a consistent, consensus-based framework for assessing and achieving world class sustainable ecosystem and resilience in UTM. We have given criteria and performance objectives to aid every stakeholder and decision maker in UTM and their respective teams to identify sustainable approaches during planning, design and execution of projects that will continue throughout operations till end-of-life phases. Our effort is about gearing UTM for Triple Win- for the People, for the Profit and for the Planet."*

**Ts. Dr. Pramila A/p Tamunaidu**

Lead Contributors: Prof. Dr. Lee Chew Tin | Assoc. Prof. Dr. Harcharanjit Singh A/L Mahinder Singh | Ts. Dr. Abd Halim Bin Md Ali | Dr. Ong Pei Ying | Qamaruzaman Bin Mohd Noor | Abdul Rashid Bin Aris | Mohd Hidayat Bin Hussin

# Foreword by SPA Leaders

*"The integrated action plan SPA 4 (Health & Wellbeing) empowers UTM's human capital. SPA 4 assesses diet, lifestyle, and overall well-being (Health & Wellbeing). Human development is a priority at the university. Students who are intelligent, loving, and joyful follow the law and respect God and His creations. All parties are expected to collaborate to carry out this plan, in accordance with their roles as drivers of planning in all areas, including religious, social, educational, economic, political, and physical infrastructure."*

**Dr. Naemah Binti Hamzah**

Lead Contributors: Prof. Madya Dr. Azlan Bin Abdul Latib | Ts. Dr. Hadafi Fitri Bin Mohd Latip | Dr. Zulfikar Bin Ahmad | Dr. Annieza Binti Muzlan | Dr. Mohd Fa'iz Bin Ahmad | Hazirah Binti Hashim | Raihan Binti Abd Karim | Mohd Shaifuddin Bin Mohamad | Norazlina Binti Md Zaid

SPA 4
HEALTH & WELL-BEING

*"The UTM Sustainability Blueprint will assist in meeting the 17 Sustainable Development Goals and creating a Net Zero Carbon Campus. UTM, as one of the best universities in Malaysia, must also ensure that green practises are implemented throughout the university. UTM requires strong commitment and cooperation from many different groups in order to successfully implement the blueprint. UTM will ensure that all students understand the university's goals, vision, and mission. Sustainability awareness can aid project growth."*

**Dr. Wan Nurul Mardiah Binti Wan Mohd Rani**

Lead Contributors: Prof. Sr. Dr. Maimunah Binti Sapri | Ir. Ts. Dr. Zaki Yamani Bin Zakaria | Dr. Nurul Azreen Binti Azlan | Noerwati Binti Dolhaji | Mohd Farid Bin Rahmat | Norhafizah Binti Mohd Hanapiah | Chew Teong Han

SPA 5
SDGs LOCALISATION

*"The hope for the blueprint is that all PTG and UTM citizens will give a solid commitment to the implementation of UTM's SDGs 2030 agenda. The support and commitment will ensure a sustainable future for UTM. This blueprint is expected to be the key reference in conducting, monitoring, and evaluating UTM's achievements in supporting the National SDG Agendas."*

**Assoc. Prof Ts. Dr. Dayana Farzeeha Binti Ali**

Lead Contributors: Dr. Nina Diana Binti Nawi | Dr. Myzairah Binti Hamdzah | Dr. Mahani Binti Stapa | Mohd Herme Yusman Bin Mohd Tahir | Ahmad Hilman Bin Borhan @ Rohan | Fasihah Binti Mohd Jaslan

SPA 6
NETWORKING & PARTNERSHIP

# Executive Summary

Sustainability represents the **idea of meeting** the need of the current generation without compromising future needs beyond looking at the stereotyped environmentalism issues. It encompasses **three pillars**; environment, economy and society which branches out to 17 **Sustainable Development Goals (SDGs)** as listed by the United Nation. Focus on knowledge-sharing and technology, Universiti Teknologi Malaysia has been diligently embracing the challenge in making sure sustainability agenda continues to be the driving force of UTM's movement way back since 2010. Back in 2009, this **higher learning institution** has initiated its first project on sustainability through two campaigns related to **sustainable energy** and **climate action** to kickstart the green future. It actually marked a turning point in UTM's **journey of sustainable growth**.

In 2011, Sustainable Unit under Office of Development and Asset introduced the concept of **Living Laboratory (LL)** to focus on involving the students in the process and encouraging the interaction among other relevant stakeholders. Currently, UTM Campus Living Lab Framework consists of **eight (8)** main areas namely Sustainable Arcade, Green Office, Sustainable Energy Management, Bio-Recycling Centre, Green School, Green Community, Sustainable Transport and Bio-Diversity. These designated areas were meticulously planned to strengthen the interactive linkages within the research-teaching-learning-operation.

UTM Sustainable Blueprint 2030 comprises of goals and objectives that will serve as milestones for the institution by incorporating sustainability as a lifestyle with guidelines for everyone to follow, including UTM staffs and students. To help with this objectives, **six (6)** strategic priorities areas (SPA) were placed into the major key results to work towards Net Zero Carbon Campus, Ecosystem Resilience, Sustainable Production and Responsible Consumption, Health & Well-Being, SDGs Localisation as well as Networking & Partnership. All of these areas are meticulously thought to enhance sustainability action plan of UTM envision 2025 in providing healthy campus experience.

Dan katakanlah Ya Allah tambahkanlah ilmu ku
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01

# INTRODUCTION

## Sustainability

Sustainability represents the idea of meeting the need of the current generation without compromising future needs. It is not just about recycling though recycling is part of it but only a tiny portion of the big equation of sustainability. It is essentially built on three pillars: environment, economy, and society. The issue of sustainability is not only about environmentalism. Embedded in most definitions of sustainability, we also find social equity and economic development concerns.

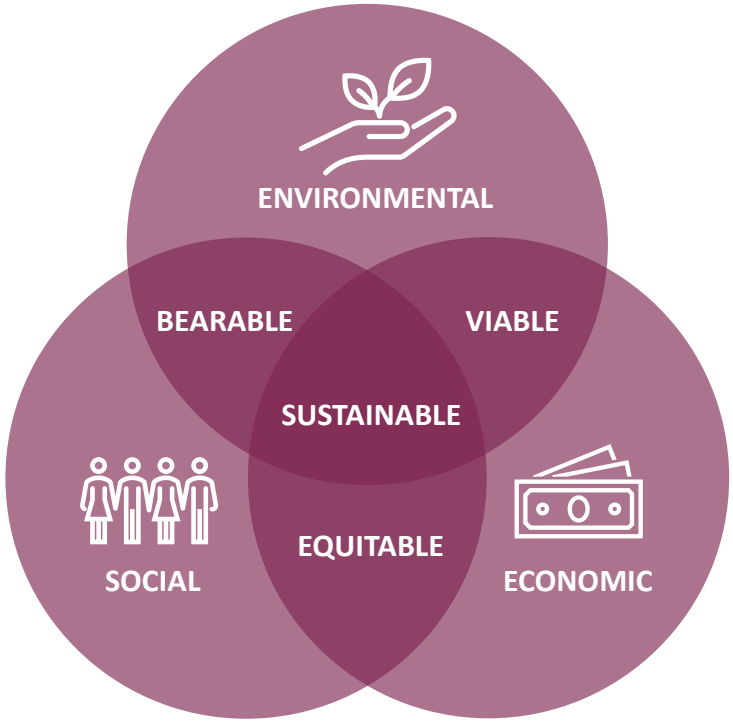



Diagram 1: Three Pillars of sustainability

**"Meeting the need of the current generation without compromising future needs"**

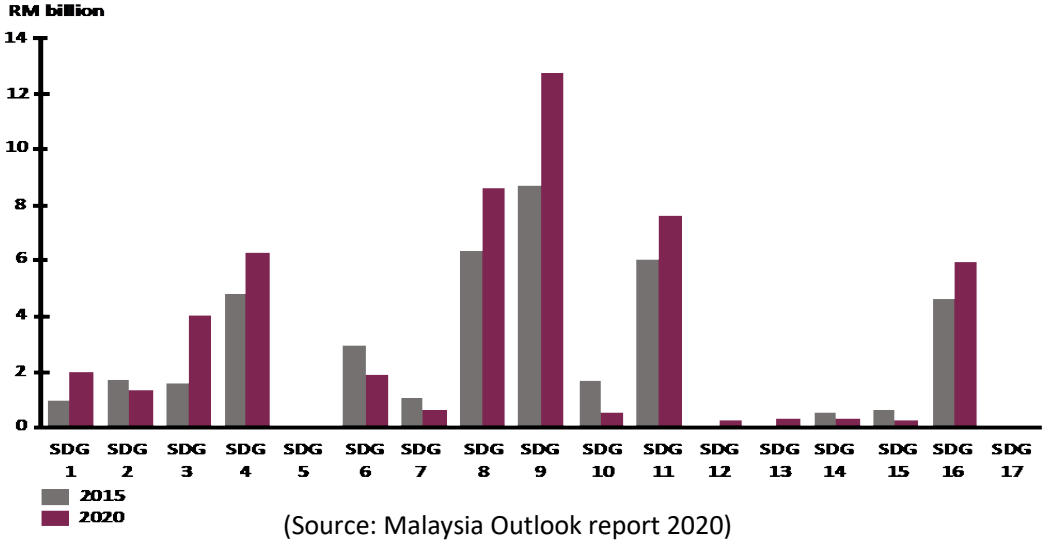
# Global Trends

A total of 17 Sustainable Development Goals (SDGs) are listed by the United Nation. Creating awareness of sustainability through education start early from the younger generation and create awareness for the older generation. As an important key that holds the future, materialising the idea of sustainability does face its limitations. UTM strength best at Goal 9 and competitive at other goals especially Goal 4 and Goal 17.

(Source: United Nation)

Diagram 1.2: Sustainable Development Goals (SDGs)

In the case of Malaysia, Economic Outlook 2022 reported while there are increments in the Development Expenditure (DE) to Sustainable Development Goals (SDG) allocation in 2020 compared to 2015, SDG4 (Quality Education) still received less allocation than SDG9 (Industry, Innovation and Infrastructure).




(Source: Malaysia Outlook report 2020)

Diagram 1.3: Development Expenditures by Sustainable Development Goals, 2015 & 2020

UTM Core Value ISES (Integrity, Synergy, Excellence, Sustainability) integrates and balance the social, economic, and environmental spheres as efforts to accomplish the SDGs implementation. UTM envision 2025 were putting into action at the functional level through the implementation of FIVE (5) Strategic Trust and EIGHT (8) Strategic Priorities throughout NINE (9) Key Departments. Localising SDGs in UTM since developed in 2019 (during the phasing out of PGU III), will be concurrent to the new direction of work culture towards SPEED, COLLABORATION and RESILIENCE practice by accelerating the Moonshot Transformative Journey throughout the ultimate indicator in Sustainable Campus Experience. Thus, the annual impact rating tool, i.e. THE Impact Ranking has been chosen as the generic outcome to analyse the ongoing initiatives and provide the fundamental mechanism for future sustainability plans by tracking each goal's performance.

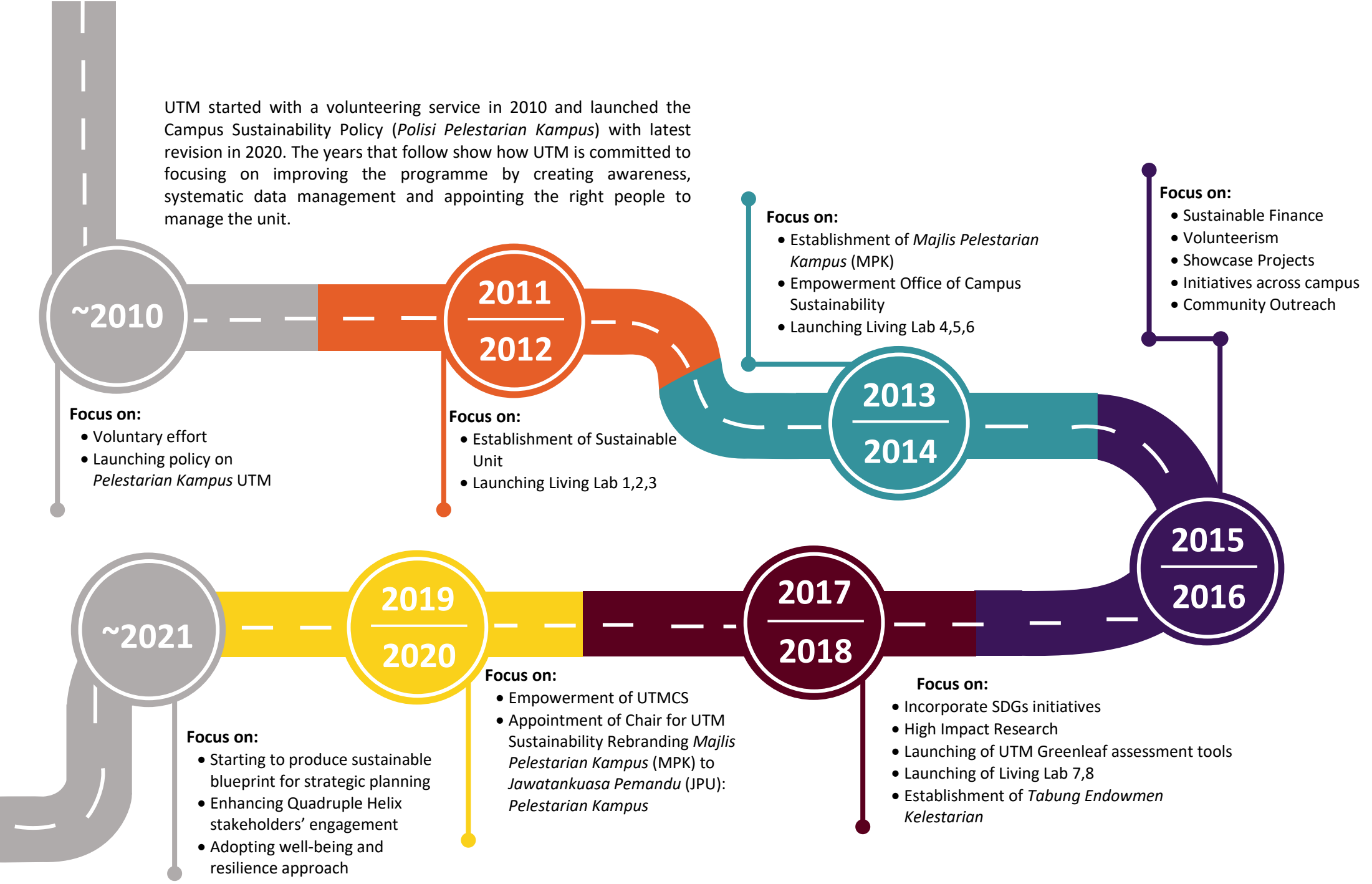
**“ UTM support the achievement of the SDGs through localisation action recognised from the previous strategic action-plan and high-impact initiatives in campus ”**

Sustainability at the operational institution may affect common financial instrument and its performance. Therefore, SPA was introduced to embed and interlink the connectivity of core-business of higher education and the commitment of university towards global policy/agenda.

This may also include environmental components, such as carbon management**,** overall protection of natural resources and reduce or minimise waste generation throughout the responsible consumption**.** These responsibilities may also reflect social issues, such as workplace diversity, health and well-being, safety, and risks**.**

Integrating the SDGs into sustainability reporting is an essential tool in promoting and incorporating these initiatives in a campus setting. These can contribute to the localisation and achievement of the SDGs, as well as to strengthen the visibility and improvement of localising SDG indicator across all sectors and stakeholders in campus**.** In order to determine the impact and good management practices, Environmental, Social, and Governance (ESG) framework will be applied to monitor the execution and commitment on targeted indicator in UTM.

UTM started with a volunteering service in 2010 and launched the Campus Sustainability Policy (*Polisi Pelestarian Kampus*) with latest revision in 2020. The years that follow show how UTM is committed to focusing on improving the programme by creating awareness, systematic data management and appointing the right people to manage the unit.



02

# UTM'S ASPIRATION

## Towards a Sustainable Campus

Ever since 2009, Malaysia has been conscientious of reducing its carbon emissions due to the worsening climate change that is changing the global landscape. As one of the prominent educational institutions in Malaysia, “UTM is obliged to work closely to respond to this pledge”. UTM has enthusiastically been thriving towards a sustainable campus to create a healthier and greener working environment by optimising natural resources sustainability and reducing energy consumption. Back in 2009, UTM initiated its first project on sustainability through two campaigns to kickstart the green future through sustainable energy. It marked a turning point in UTM’s journey of sustainable growth. Ever since then, there was no turning back.

**“UTM has been working diligently to push ahead with various sustainability agenda”**

# UNDERSTANDING OUR

## PAST, PRESENT & FUTURE

Established in 1972, **UTM earned the status of a Research University in 2010**. This acknowledgement has further motivated UTM to move forward with the national commitment to promote sustainability.

2008 - 2013

2013 - 2020

2021 – current

### Prof. Dato' Seri Ir. Dr. Zaini Ujang

5th UTM Vice Chancellor

When **Datuk Seri Dr Zaini Ujang served as the UTM Vice Chancellor, he was the strong advocate of the UTM campus sustainability agenda.** On March 16, 2011, the then Minister of Natural Resources and Environment, Dato 'Seri Douglas Uggah Embas had officially **launched UTM as a Sustainable Campus**.

### Prof. Datuk Ir. Dr. Wahid bin Omar

6th UTM Vice Chancellor

**The legacy was then continued by his successor, Prof Datuk Dr Ir Wahid Omar.** At UTM, the concept of sustainability is extended beyond financial dimensions, leveraging various platform of researches, programmes, community-based learning and industrial linkages to move the sustainability **agenda beyond the 2030 Agenda for Sustainable Development**. In 2018, UTM Core Value ISES (Integrity, Synergy, Excellence, Sustainability) were institutionalised.

### Prof. Datuk Ir. Ts. Dr. Ahmad Fauzi Bin Ismail

7th UTM Vice Chancellor

*"Strong work ethics, high-commitment to fairness and safe working environment, foster institutional growth"*

In 2023, Prof. Datuk Ir. Ts. Dr. Ahmad Fauzi introduces the ***enVision Moonshot*** to accelerate the implementation of enVision UTM 2025 with a focus on future-oriented graduates, strategic research, networking, and consortium.

# FROM SMALL VOLUNTARY ACTIONS TO SYSTEMATIC MOVEMENT

UTM has always been committed towards campus sustainability as it is reflected in the holistic drive by the campus community in integrating and balancing economic, social and environmental spheres to meet the current needs without compromising the ability to exist and survive continuously. From small steps which UTM has taken in the early journey in creating more sustainable campus, they have paved way for a systematic movement to reinforce this objective.

## Voluntary Moments

PHASE 1

**2009-2011**

- Paper reuse & recycle initiative
- Energy reduction & conservation

## Moving towards Stakeholder's Engagement

PHASE 2

**2012-2014**

- Living Lab approach was introduced focus on:
  - ✓ involving the students in the process
  - ✓ encouraging the interaction among other relevant stakeholders (academia, researcher and administrative personnel)

## Awareness

PHASE 3

**2015-2017**

- Public Awareness programmes
  - ✓ Problem-Based Learning for Low Carbon Society

## Improvement of Operation

PHASE 4

**2018-2020**

- University accumulated a wealth of experience in integrating sustainability into its strategic plan.
- Has institutionalised strategy throughout its community, campus wide:
  - ✓ from paperless initiatives
  - ✓ car-free days
  - ✓ recycling stations
  - ✓ green managers

## enVision 2021-2025

The University sustainability agenda is continued under this strategic plan, through eight strategic priorities which are linked to five interrelated strategic thrusts, namely:

1. World- class Holistic Talents to extend the Frontier of Education and Research;
2. Creative and Resilient Performance Delivery through Emphatic and Agile Governance;
3. Institutional Growth through Unique Niche and Specialisation for Long- term Sustainability;
4. Transformative Life Experiences through Knowledge Empowerment and Trust; and
5. Global Eminence as Malaysian Top Research University in 2025.

# LIVING LAB

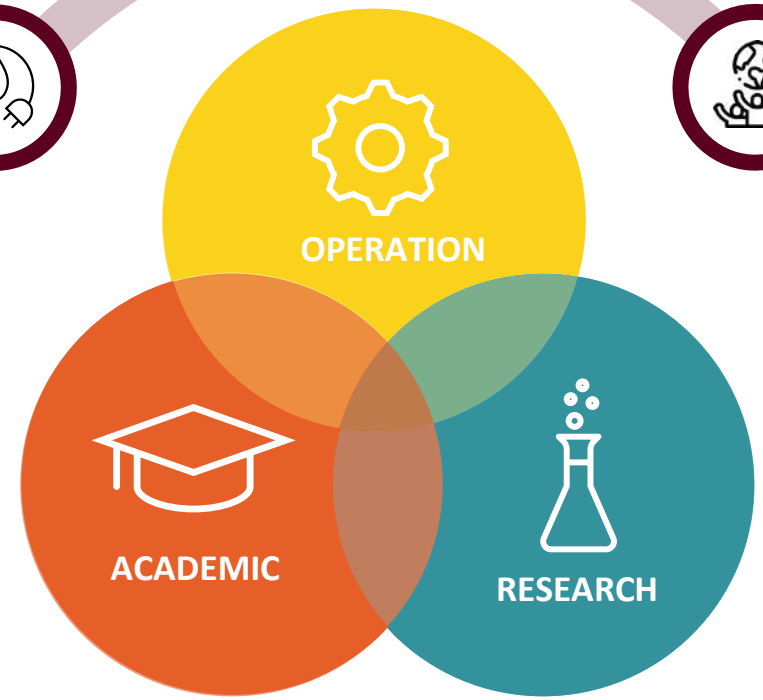
**UTM Campus Living Lab Framework** will eventually strengthen the **interactive linkages within the research-teaching-learning-operation**. It adopts and grows organically by facilitating adaptive governance which involves the co-management and co-implementation of campus sustainability and improves the transformational changes of education for sustainability in institutional setting using the sustainability science approach and issue-based approach to accommodate interdisciplinary approach in teaching and learning. In this context, it does not only minimise the impact of campus operation on the environment but also provide dynamic teaching and learning platform for students and researchers to learn and test an adaptive management system.

**LL4: Bio-Recycling Centre**
To manage food waste and kitchen waste from food arcades around the campus which will be collected and mixed with shredded garden waste.

**LL5: Green School**
To educate all school children in all levels such as kindergarten, elementary, primary, secondary, and high school students with sustainability concepts and approach.

**LL3: Sustainable Energy Management**
To efficiently manage the consumption of energy in a manner that is consistent with providing a conducive and sustainable campus environment.

**LL6: Green Community**
To guide and assist the society by providing a sustainable solution besides helping the community through sustainable approach.




**LL2: Green Office**
To provide a healthier working environment, reduce pollution and reduce energy consumption.

**LL7: Sustainable Transport**
To focus on improving the Public Transport within campus and public interconnection to an external road of UTM campus

**LL1: Sustainable Arcade**
To reduce the waste generated in the arcade (solid waste, and food waste), promote recycling and resource recovery which reduces the carbon emission generated.

**LL8: Biodiversity**
To sustain green environment while offering ecotourism experience to others.

## SUSTAINABLE ARCADE

## GREEN OFFICE

LL1 LL2

LL3 LL4

## SUSTAINABLE ENERGY MANAGEMENT

## BIO-RECYCLING CENTRE

## GREEN SCHOOL

## GREEN COMMUNITY

LL5 LL6 LL7 LL8

## SUSTAINABLE TRANSPORTATIONS

## BIO-DIVERSITY

# Internal External Analysis

1. Experts in energy auditing
2. *Green Belt Development* Master Plan
3. Implementation of *Car Free Campus* programme
4. Experts in many areas such as Sustainability RA, publications, AEMAS EMGS, networking
5. High participation in awareness campaign
6. Experts in research and innovation
7. Lower Case Comprehensive Alumni Database
8. Resilient campus ecosystem surrounded by nature
9. Eco-tourism
   [52.6 % (forest vegetation); 23.4 % (planted vegetation area); 21.8% (water catchment area); 2% (lake and rivers)]
10. Various tourist attractions
    [UTM Observatory; UTM Recreational Park; UTM Orchard; UTM Trails; UTM Deer Park; UTM Remote Control Circuit; UTM Bird Watching; UTM Tropical Park; University Lakes.]
11. Globally recognised researchers and experts
12. Awareness activities
13. Good hazardous waste monitoring system
14. Waste reduction
15. Great OSHE plan for workplace safety
16. Professional and expert trainers from many PTJs
17. Top management support
18. Synergy between stakeholders
19. Technology transfer information and knowledge sharing
20. High awareness and exposure to SDGs
21. Green managers team at each PTJ
22. *Green Leaf Instrument*
23. Well-experienced researchers and academicians
24. Prominent members of Board of Director
25. Partnership with more than 300 international institutions
26. Research University status
27. Volunteerism initiatives

# Internal External Analysis

1. In line with RMK12
2. Increased attention on SDG initiatives
3. Strong cooperation with local and international partners
4. Commitment from eco warriors and sustainability warriors
5. International and national grants
6. Environmental sustainability research
7. UTM Flagship Grants
8. Empowering Subject Matter Experts
9. Revolution 4.0 IoT Center
10. UTM Material Recycling Center
11. Policies and actions in promoting green technology
12. Multitasking job description by all PTJs
13. Professional membership
14. Utilizing auditing tools
15. Focus placed on green technology in RMK 12
16. Various government policies and blueprints (4IR/Hydrogen Roadmap)
17. Attractive curriculum designs
18. ASEAN level market
19. Good networking with government agencies
20. Better funding opportunity mechanism
20. Strong alliances and networks (AIMS, ATU NET, AIMS4STAR consortia, Erasmus) and NGOs
21. Engagement on social media

03

# ACCELERATING THE REALISATION OF A SUSTAINABLE CAMPUS

# ACCELERATING THE REALIZATION OF A SUSTAINABLE CAMPUS

In managing challenges such as resources, services, health and well-being, the sustainability landscape is an important agenda while taking into account the diversity of their stakeholders.

This blueprint helps to determine the directions and goals that UTM plans to create. It comprises of goals and objectives that will serve as milestones for the institution by incorporating sustainability as a lifestyle with guidelines for everyone to follow, including UTM students.

**“INCORPORATING SUSTAINABILITY AS A LIFESTYLE”**

## VISION

To ingrain sustainability in campus DNA towards developing a holistic HEIs ecosystem.

## OBJECTIVES

1. To strengthen the UTM Living Laboratory at all sectors inclusively UTM citizen.
2. To enhance sustainability action plan of UTM envision 2025 in providing healthy campus experience.
3. To uphold national and global agenda into comprehensive monitoring at all stakeholders' level.

> **"All 39 initiatives were mapped to 17 SDGs and UTM enVision 2025 Mapping."**

## HIGHLIGHT

**06** Strategic Priority Areas

**18** Strategic Initiatives

**39** Initiatives

**26** Components

**06** Implementation Clusters

**03** Implementation and Monitoring Phases

# PREAMBLE

**SPA 1**
**NET ZERO CARBON CAMPUS**

Strategic Priority Area 1 launched a Net Zero Carbon (NZC) campus initiative to achieve net zero carbon emissions by 2050. This initiative entails **establishing NZC guidelines**, **forming a community of NZC best practises within UTM**, and **engaging internal and external stakeholders through an awareness programme** to chart our path to net zero carbon emissions. UTM hopes to position itself as a champion in driving NZC initiatives in Malaysia by establishing the UTM NZC community of practises, which is aligned with the government's goal of becoming a carbon-neutral country by 2050. Furthermore, the initiative entails **establishing a big data management system to monitor the implementation and impact of NZC initiatives**, as well as **instruments to enable UTM management to establish a baseline of GHG emissions** on the UTM campus, **set GHG emissions reduction targets**, and **track PTJ achievement**. This will position UTM as the champion of NZC initiatives in Malaysia, as well as showcase our best practises for engaging internal and external stakeholders.

**SPA 2**
**ECOSYSTEM RESILIENCE**

Strategic Priority Area 2 aims to kickstart an effort to improve preparedness and resilience through the use of natural resources. This effort includes **developing a data inventory and a reporting system** for all aspects of water, biodiversity (flora and fauna), noise pollution, and air quality. These efforts will involve stakeholders in conservation and resilience programmes that balance natural and built resources while also improving accessibility and space sharing. UTM is proactive in creating a welcoming and sustainable campus environment by promoting education tourism and an open campus, reducing water consumption, implementing ecosystem zoning, and addressing potential noise issues.

**SPA 3**
**SUSTAINABLE PRODUCTION & RESPONSIBLE CONSUMPTION**

Strategic Priority Area 3 on Sustainable and Responsible Consumption is all about preparing Universiti Teknologi Malaysia (UTM) for a **Triple Win-for-People, Profit, and Planet**. In line with the national and international agendas, UTM will set an example by transitioning from business-as-usual to an outstanding sustainable entity that provides transparent reports on this agenda to the local and federal government. As a top-ranked Higher Learning Institution (HEI), UTM will be an outstanding change agent in **addressing and implementing sustainability projects holistically by connecting people, the environment, products, and services**, and providing maximum transparency to both the UTM community and outsiders on its best practises in sustainable projects. As a result, UTM will be the first HEI to **support the Malaysia Open Science Platform (MOSP) initiative** to make data findable, accessible, interoperable, and reusable (FAIR), a valuable national asset. As a result, the primary goal of SPA 3 is **to examine the UTM community's solid waste generation patterns** (organic, inorganic, inert, and e-waste) as well as its **stakeholders'/community's commitment to co-creating solutions to address sustainable and responsible consumption.** The SPA 3 builds on existing sustainable production and consumption efforts while also introducing innovative methodologies as key principles in UTM's development towards 2030.

# PREAMBLE

**SPA 4 HEALTH & WELL-BEING**

Strategic Priority Area 4 recognised the significance of launching health and well-being initiatives aimed at improving the quality of life for UTM communities. The **UTM Well-Being Index will be developed**, and the most **common components will be prioritised for treatment, recovery, and treatment**. The initiative also includes the creation of programmes and public awareness campaigns to improve the health and well-being of UTM communities. UTM intends to **provide evidence-based interventions and action advisors for well-being initiatives** to the university administration. The data gathered from the programmes will be analysed in terms of well-being (high, moderate, or low) and the eight components that contribute to well-being. Data interpretation and analysis will be used **to improve services and reduce the gap in the initiative.** UTM will foster a positive working environment and relationship between management and employees. UTM will also organise Carnival 3S to promote 3S (Safety, Security, and Health) practises in the UTM community among staff, students, and residents on campus, including various activities and programmes that lead to 3S practise and culture.

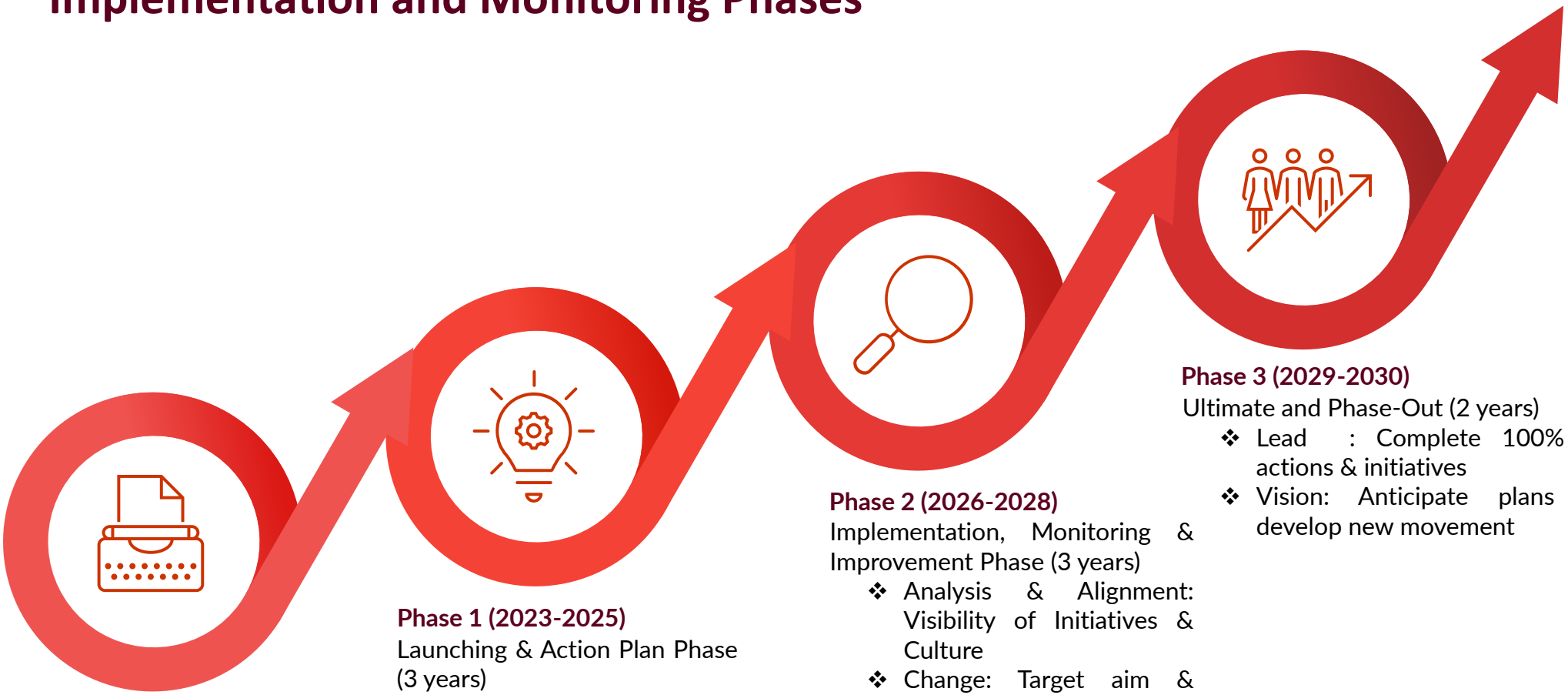
**SPA 5 SDGs LOCALISATION**

Strategic Priority Area 5 on SDG localisation refers to the process of taking the university's context into account in order to achieve UTM's sustainability agenda by 2030. Higher education institutions have begun to prioritise SDG localization by incorporating sustainability elements into teaching and learning, community service, and research and innovation. UTM, one of Malaysia's premier universities, has also **taken the initiative to incorporate the SDGs into its university policies, strategies, mission statement, and operations**. UTM focuses on three (3) main components to strengthen SDG localization efforts: i) capacity building and engagement; (ii) support and planning framework; and (iii) tools and execution. These components are intended to aid in the process of SDG localisation within the UTM context by 2030. The strategies established to capitalise on UTM's stakeholders and experts to facilitate the process and implementation of the various SDG localisation initiatives. SPA 5 is also intended **to ensure that all PTJ have clear guidelines for aligning their niche area with the relevant sustainability goals.** Finally, the UTM-SDG Localisation Agenda is expected to be the main output to serve as the primary reference to ensure SDG localisation.

**SPA 6 NETWORKING & PARTNERSHIP**

Strategic Priority Area 6 is intended to ensure that all parties adhere to the sustainability agenda in our efforts to improve the quality and strengthen institutional networking and partnership locally and globally. Several initiatives are proposed to be undertaken and observed by all parties involved in order to achieve this. These initiatives include **mapping networking and collaboration**, **monitoring and smart reporting**, **enriching collaboration**, **measuring high impact**, and **highlighting experts and opportunities**. Each of these initiatives is thoroughly discussed in the report. Furthermore, we must strengthen networking and partnership strategies through effective engagement. and to co-support the current UTM brand and visibility enhancements in support of the UTM sustainability agenda through 2030. Finally, these initiatives are reflected in the specific objectives highlighted, which are: 1) to embark on AIMS4STAR high impact partnership via quadruple helix synergy entities by 2030; 2) to increase UTM brand and visibility through strategic corporate communication; and 3) to improve the university's world ranking by incorporating sustainable partnerships that can translate the University's sustainability agenda for the prosperous future of humanity. All of these specific goals are then converted into Action-Plan KAIs. Finally, these initiatives and goals are expected to **produce positive results that reflect the 2030 long-term sustainability plan**. Recognizing the importance of campus sustainability, strategic initiatives aimed at improving quality and strengthening institutional networking and partnerships on a local and global scale are urgently required.

# Implementation and Monitoring Phases



2022: Produce UTM Sustainability Blueprint 2030

**Phase 1 (2023-2025)**
Launching & Action Plan Phase (3 years)

- Explore : Make progress on blueprint actions & initiatives
- Improve: Add in & adjust actions & initiatives
- Map action plans to UTM enVision 2025

**Phase 2 (2026-2028)**
Implementation, Monitoring & Improvement Phase (3 years)

- Analysis & Alignment: Visibility of Initiatives & Culture
- Change: Target aim & observe impact
- Achieve: Collaboration approach to achieve action & initiatives

**Phase 3 (2029-2030)**
Ultimate and Phase-Out (2 years)

- Lead : Complete 100% of actions & initiatives
- Vision: Anticipate plans to develop new movement

# UTM SUSTAINABILITY BLUEPRINT 2030

## VISION

To ingrain sustainability in campus DNA towards developing a holistic HEIs ecosystem

## OBJECTIVES

- To strengthen the UTM Living Laboratory at all sectors inclusively UTM citizen
- To enhance sustainability action plan of UTM envision 2025 in providing healthy campus experience
- To uphold national and global agenda into comprehensive monitoring at all stakeholders' level

## STRATEGIC PRIORITY AREAS & COMPONENTS

### SPA 1 NET ZERO CARBON CAMPUS

- Climate
- Building
- Energy
- Green & Reserved Areas
- Mobility & Transport

### SPA 2 ECOSYSTEM RESILIENCE

- Water
- Noise
- Air
- Biodiversity

### SPA 3 SUSTAINABLE PRODUCTION & RESPONSIBLE CONSUMPTION

- Life Cycle Analysis
- Product Innovation
- Green Procurement
- Smart Waste Monitoring
- Awareness

### SPA 4 HEALTH & WELL-BEING

- Life balance
- Well-being Index
- Balanced Nutrition

### SPA 5 SDGs LOCALISATION

- Capacity building
- Engagement
- Tools & Execution
- Support & Planning Framework

### SPA 6 NETWORKING & PARTNERSHIP

- Volunteerism
- Industry
- Government
- Academia
- Civil Society

## STRATEGIC INITIATIVES & PHASES

### Phase 1

- SPA 1 SI1 — Advancing towards Net Zero Transition
- SPA 2 SI1 — Leveraging natural resource to improve preparedness and resilience
- SPA 4 SI1 — Improving a healthy, productive, and conducive campus life
- SPA 4 SI2 — Empowerment of 3S (*Sihat*, *Selamat*, *Sejahtera*) committee
- SPA 1 SI3 — Fostering living lab for decarbonisation and resilience adaption

### Phase 2

- SPA 1 SI2 — Implementation of carbon mitigation project
- SPA 2 SI2 — Securing resource and increase rate
- SPA 5 SI3 — Establish data-driven instrument to improve data sharing and Open Science

### Phase 3

- SPA 2 SI3 — Establishment of conservation, research and education
- SPA 3 SI3 — Spearheading sustainable activities
- SPA 6 SI3 — Emphasizing on high impact quadruple helix CSR project

- SPA 3 SI1 — Building a knowledge driven smart community
- SPA 3 SI2 — Nurturing sustainable lifestyle@UTM
- SPA 5 SI1 — Development of capacity building and engagement plan
- SPA 4 SI3 — Execute 3S programmes and carnival
- SPA 6 SI1 — Leadership in sustainability through local, global and alumni partnership
- SPA 5 SI2 — Establish UTM-SDG localisation
- SPA 6 SI2 — Strengthening UTM brand and visibility to enhance global reputation

**Cluster:** Governance | Operation | Enabler | Monitoring | Prevention | Finance

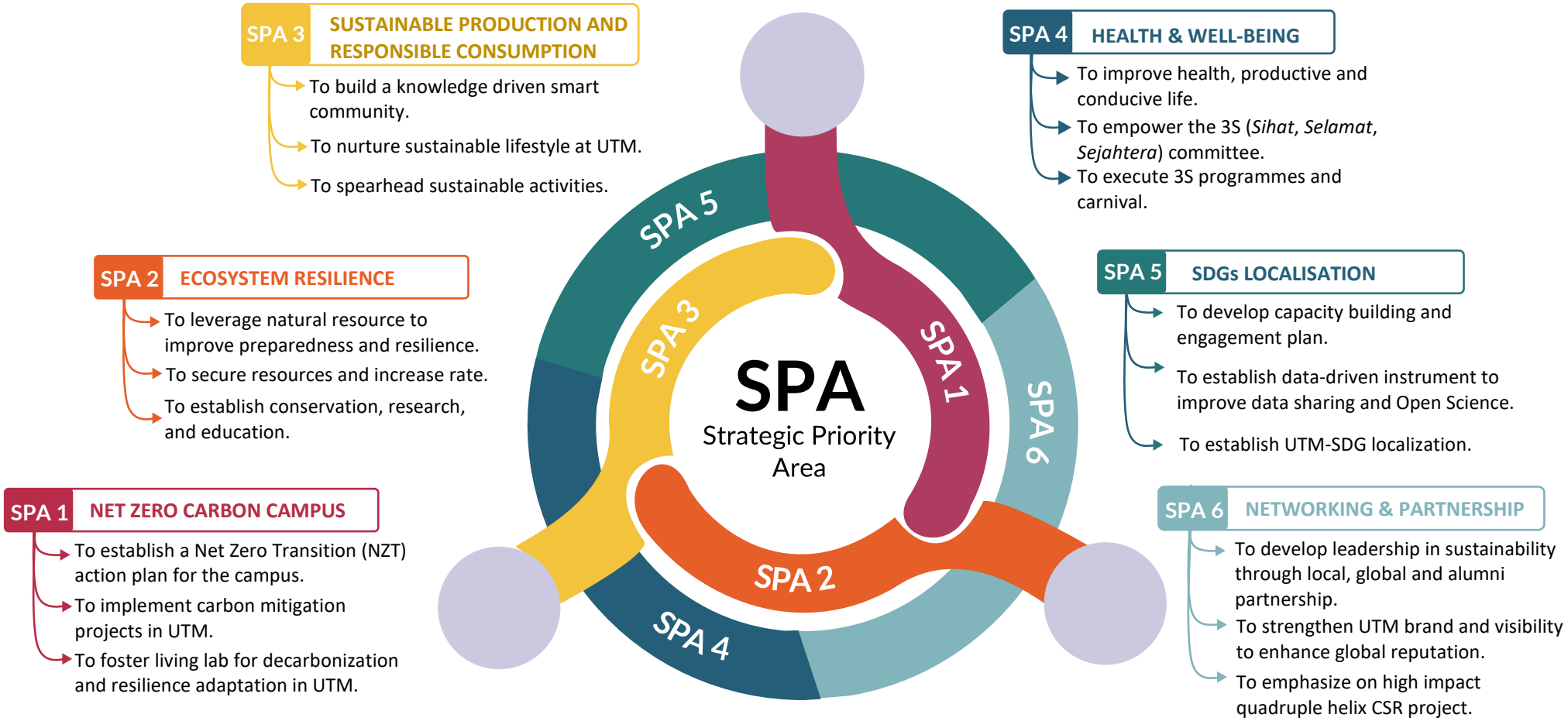
## SUSTAINABLE DEVELOPMENT GOALS MAPPING

| 1 | 2 | 3 | 5 | 1 | 1 | 1 | 1 | 4 | 1 | 4 | 2 | 4 | 1 | 2 | 4 | 5 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Initiative | Initiatives | Initiatives | Initiatives | Initiative | Initiative | Initiative | Initiative | Initiatives | Initiative | Initiatives | Initiatives | Initiatives | Initiative | Initiatives | Initiatives | Initiatives |

## UTM enVision 2025 MAPPING

| SP3 | ST1 | ST3 | ST 4 | ST5 | S3 | S6 | S7 |
|---|---|---|---|---|---|---|---|
| To inculcate UTM core values namely Integrity, Synergy, Excellence and Sustainability (ISES) into the work and management ecosystem | World-class talent, Continuous upskilling and reskilling | Support the development of unique niche and specialisation | Transformative Life Experiences through Knowledge Empowerment and Trust | The use of high-technology tools in localising SDG facilitate UTM to fulfil the global sustainability agenda. | To inculcate UTM core values namely Integrity, Synergy, Excellence and Sustainability (ISES) into work and management ecosystem | Provide sustainable campus experience to UTM students, staff and surrounding community. | Enculturate data-driven culture with high level of trust in technology |

This Blueprint consists of six main pillar Strategic Priority Areas (SPAs). The three elements in SPA 1 (Net Zero Carbon), SPA 2 (Ecosystem Resilience), and SPA 3 (Sustainable Production and Consumption) are the main areas of sustainability related to operation in campus and they are being supported by SPA 4 (Health & Wellbeing), SPA 5 (SDGs Localization) and SPA 6 (Networking & Partnership) which serve as guidance for the implementation purposes.



# Governance

| | | |
|---|---|---|
| SI1 I 1.1 — Establish Net Zero Carbon (NZC) community to implement NZC practices — P1 | SI1 I 1.1 — Establish UTM Well-Being Index with enhancement programme — P1 | SI1 I 1.1 — Identify talents & experts to guide and plan execution towards localising SDGs — P1 |
| SI1 I 1.1 — Develop climate preparedness & campus resilience action plan — P1 | SI2 I 2.1 — Finalise key indicator & identify new indicators that is relevant to establish action plans on localising SDGs — P2-P3 | SI3 I 3.1 — Establish database GLCs Industry which apply CSR Government Index — P1-P3 |
| SI1 I 1.1 — Provide a one-stop platform to perform Life Cycle Analysis (LCA) & further develop a Zero Waste Index (ZWI) — P2-P3 | | |

# Operation

- SI2 I 2.1 — Implement smarter & efficient operation — P2
- SI2 I 2.1 — Enhance alternative resource consumption & built design — P2
- SI2 I 2.1 — Enhance campus operation measures with community & stakeholders outreach — P1-P2
- SI1 I 1.2 — Produce campus well-being map — P1
- SI3 I 3.2 — Create a model food campus that is health-promoting, ecologically minded, economic & nutrient balanced — P1
- SI2 I 2.3 — Improve reputation & impact ranking — P1-P3

# Monitoring

- SI1 I 1.2 — Manage big data in NZC — P2
- SI1 I 1.2 — Establish inventory baseline data & reporting system — P1
- SI1 I 1.2 — Develop smart & traceable waste tracking & monitoring mechanism — P1-P3
- SI2 I 2.1 — Recognise 3S (*Sihat*, *Selamat*, *Sejahtera*) committee for initiatives coordination — P1
- SI3 I 3.2 — Develop effective monitoring dashboard & feedback assessment — P2-P3
- SI2 I 2.1 — Develop UTM's SDGs Awareness Index — P1-P3

# Prevention

- SI2 I 2.2 — Identify & upgrade low carbon infrastructure and assets — P2
- SI2 I 2.2 — Provide a one-stop communication platform for efficient fault reporting — P2
- SI3 I 3.1 — Develop Green Procurement guideline for product, material & services — P2-P3
- SI2 I 2.2 — Provide support & recommend evidence-based intervention — P1
- SI1 I 1.2 — Plan training, certification & capacity-building programmes — P1-P3

# Enabler

(Participation & technology)

- SI3 I 3.1 — Demonstrate technological solution & nature-based solution — P3
- SI3 I 3.2 — Build awareness & monitor community acceptance — P1
- SI3 I 3.2 — Engage on conservation, preparedness & resilience programme that outreach to stakeholders involvement — P1-P3
- SI1 I 1.3 — Develop technological innovations to enhance waste prevention & recovery — P1-P2
- SI2 I 2.2 — Facilitate responsible consumption initiative to increase value chain — P1-P2
- SI3 I 3.1 — Increase participation & accessibility to programme to culture 3S — P1
- SI2 I 2.2 — Consolidate roles & responsibilities of UTM's PTJ (Faculties, CTLD) on SDGs — P2-P3
- SI3 I 3.1 — Integrate data gathering — P2-P3
- SI2 I 2.2 — Promote high-impact content through new media platforms — P1-P3
- SI1 I 1.1 — Fostering strategic engagement and serve as hub of collaboration addressing global challenge — P1-P3

# Finance

(Scheme & accessibility)

- SI1 I 1.3 — Develop carbon mitigation investment framework — P1
- SI3 I 3.1 — Promote edutourism & open campus towards space sharing accessibility — P1-P3
- SI3 I 3.2 — Accelerate research & innovation through green funds, grants and endowment — P1-P3
- SI1 I 1.3 — Promote sponsorship programme to encourage multi-stakeholder engagement — P1-P3
- SI1 I 1.2 — Invest in University Sustainable Programme while incorporating the ESG criteria — P1-P3

# Implementation Cluster

# INITIATIVES BY CLUSTER & PHASES

## SPA 1 NET ZERO CARBON CAMPUS

Climate · Building · Energy · Green & Reserved Areas · Mobility & Transport

| | | |
|---|---|---|
| SPA 1 SI1 | **Advancing towards Net Zero Transition** | |
| SI1 I 1.1 | Establish Net Zero Carbon (NZC) community to implement NZC practices | P1 |
| SI1 I 1.2 | Big data management in Net Zero Carbon | P2 |
| SI1 I 1.3 | Develop carbon mitigation investment framework | P1 |
| SPA 1 SI2 | **Implementing carbon mitigation project** | |
| SI2 I 2.1 | Implement smarter & efficient operation | P2 |
| SI2 I 2.2 | Identify & upgrade low carbon infrastructure and assets | P2 |
| SPA 1 SI3 | **Fostering living lab for decarbonisation and resilience adaption** | |
| SI3 I 3.1 | Demonstrate technological solution & nature-based solution | P3 |
| SI3 I 3.2 | Build awareness & monitor community acceptance | P1 |

## SPA 2 ECOSYSTEM RESILIENCE

Water · Noise · Air · Biodiversity

| | | |
|---|---|---|
| SPA 2 SI1 | **Leveraging natural resource to improve preparedness and resilience** | |
| SI1 I 1.1 | Develop climate preparedness & campus resilience action plan | P1 |
| SI1 I 1.2 | Establish inventory baseline data & reporting system | P1 |
| SPA 2 SI2 | **Securing resource and increase rate** | |
| SI2 I 2.1 | Enhance alternative resource consumption & built design | P2 |
| SI2 I 2.2 | Provide a one-stop communication platform for efficient fault reporting | P2 |
| SPA 2 SI3 | **Establishing conservation, research, and education** | |
| SI3 I 3.1 | Promote edutourism & open campus towards space sharing accessibility | P1-P3 |
| SI3 I 3.2 | Engage on conservation, preparedness & resilience programme that outreach to stakeholders involvement | P1-P3 |

## SPA 3 SUSTAINABLE PRODUCTION & RESPONSIBLE CONSUMPTION

Life Cycle Analysis · Product Innovation · Green Procurement · Smart Waste Monitoring · Awareness

| | | |
|---|---|---|
| SPA 3 SI1 | **Building a knowledge driven smart community** | |
| SI1 I 1.1 | Provide a one-stop platform to perform Life Cycle Analysis (LCA) & further develop a Zero Waste Index (ZWI) | P2-P3 |
| SI1 I 1.2 | Develop smart & traceable waste tracking & monitoring mechanism | P1-P3 |
| SI1 I 1.3 | Develop technological innovations to enhance waste prevention & recovery | P1-P2 |
| SPA 3 SI2 | **Nurturing sustainable lifestyle@UTM** | |
| SI2 I 2.1 | Enhance campus operation measures with community & stakeholders outreach | P1-P2 |
| SI2 I 2.2 | Facilitate responsible consumption initiative to increase value chain | P1-P2 |
| SPA 3 SI3 | **Spearheading Sustainable Activities** | |
| SI3 I 3.1 | Develop Green Procurement guideline for product, material & services | P2-P3 |
| SI3 I 3.2 | Accelerate research & innovation through green funds, grants and endowment | P1-P3 |

**Guide:** **SPA**: Strategic Priority Area **SI**: Strategic Initiative **I**: Initiative **P**: Phase

**Cluster:** Governance · Operation · Enabler · Monitoring · Prevention · Finance

# INITIATIVES BY CLUSTER & PHASES

## SPA 4 HEALTH & WELL-BEING

Life balance · Well-being Index · Balanced Nutrition

**SPA 4 SI1 — Improving a healthy, productive, and conducive campus life**

| | | |
|---|---|---|
| SI1 I 1.1 | Establish UTM Well-Being Index with enhancement programme | P1 |
| SI1 I 1.2 | Produce campus well-being map | P1 |

**SPA 4 SI2 — Empowerment of 3S (*Sihat*, *Selamat*, *Sejahtera*) committee**

| | | |
|---|---|---|
| SI2 I 2.1 | Recognise 3S (*Sihat*, *Selamat*, *Sejahtera*) committee for initiatives coordination | P1 |
| SI2 I 2.2 | Provide support & recommend evidence-based intervention | P1 |

**SPA 4 SI3 — Execute 3S programmes and carnival**

| | | |
|---|---|---|
| SI3 I 3.1 | Increase participation & accessibility to programme to culture 3S | P1 |
| SI3 I 3.2 | Create a model food campus that is health-promoting, ecologically minded, economic and nutrient balanced. | P1 |

## SPA 5 SDGs LOCALISATION

Capacity building · Engagement · Tools & Execution · Support & Planning Framework

**SPA 5 SI1 — Development of capacity building and engagement implementation plan**

| | | |
|---|---|---|
| SI1 I 1.1 | Identify talents & experts to guide and plan execution towards localising SDGs | P1 |
| SI1 I 1.2 | Plan training, certification & capacity-building programmes | P1-P3 |
| SI1 I 1.3 | Promote sponsorship programme to encourage multi-stakeholder engagements | P1-P3 |

**SPA 5 SI2 — Establish UTM-SDG localisation**

| | | |
|---|---|---|
| SI2 I 2.1 | Finalise key indicators and identify new indicators that are relevant to establish action plans on localising SDGs | P2-P3 |
| SI2 I 2.2 | Consolidate roles & responsibilities of UTM's PTJ on SDGs | P2-P3 |

**SPA 5 SI3 — Establish data-driven instrument to improve data sharing and Open Science**

| | | |
|---|---|---|
| SI3 I 3.1 | Integrate data gathering | P2-P3 |
| SI3 I 3.2 | Develop effective monitoring dashboard & feedback assessment | P2-P3 |

## SPA 6 NETWORKING & PARTNERSHIP

Volunteerism · Industry · Government · Academia · Civil Society

**SPA 6 SI1 — Leadership in sustainability through local, global and alumni partnership**

| | | |
|---|---|---|
| SI1 I 1.1 | Fostering strategic engagement and serve as hub of collaboration addressing global challenge | P1-P3 |
| SI1 I 1.2 | Invest in University Sustainable Programme while incorporating the ESG criteria | P1-P3 |

**SPA 6 SI2 — Strengthening UTM brand and visibility to enhance global reputation**

| | | |
|---|---|---|
| SI2 I 2.1 | Develop UTM's SDGs Awareness Index | P1-P3 |
| SI2 I 2.2 | Promote high-impact content through new media platforms | P1-P3 |
| SI2 I 2.3 | Improve reputation & impact ranking | P1-P3 |

**SPA 6 SI3 — Emphasizing on high impact quadruple helix CSR project**

| | | |
|---|---|---|
| SI3 I 3.1 | Establish database GLCs Industry which apply CSR Government Index | P1-P3 |

**Guide:** **SPA**: Strategic Priority Area **SI**: Strategic Initiative **I**: Initiative **P**: Phase

**Cluster:** Governance · Operation · Enabler · Monitoring · Prevention · Finance

# SPA 1 NET ZERO CARBON CAMPUS

Climate | Building | Energy | Green & Reserved Areas | Mobility & Transport

## SPA 1 SI1 Advancing towards Net Zero Transition

The initiative is to **implement NZC campus practices for the campus**. It involves forming the community of NZC best practices within UTM, and establishment of the NZC guideline, to chart **UTM pathway to achieve net zero carbon emissions by 2050**.

By establishing the UTM NZC community of practices, it shall position **UTM as the champion in driving the NZC initiatives in Malaysia**.

The showcase of NZC best practices could be utilised to **engage the internal and external stakeholders** in the awareness programme, and ultimately lead to **collaboration with the industry, government, and communities**.

**Objectives:**

1. To establish NZC community of practice.
2. To develop NZC best practices.
3. To encourage engagement from internal and external stakeholders to increase their awareness on NZC.

**Initiatives:**

| | | |
|---|---|---|
| SI1 I 1.1 | Establish Net Zero Carbon (NZC) community to implement NZC practices | P1 SP3 |
| SI1 I 1.2 | Big data management in Net Zero Carbon | P2 S6 |
| SI1 I 1.3 | Develop carbon mitigation investment framework | P1 |

## SPA 1 SI2 Implementing carbon mitigation project

The initiative is related to establish the **big data management related to the governance and the monitoring** of implementation and impact of NZC initiatives.

Instruments shall be developed to enable the UTM management to **establish the baseline of GHG emissions in UTM campus**.

The instruments could be used **to monitor the achievement of PTJs'** target, and ultimately, overall achievement of UTM to become **NZC campus**. These **data could support the prediction and monitoring of weather and pollution event**.

**Objectives:**

1. To encourage investment in carbon mitigation projects.
2. To develop investment frameworks to attract investments from external parties for carbon mitigation projects in UTM.

**Initiatives:**

| | | |
|---|---|---|
| SI2 I 2.1 | Implement smarter and efficient operation | P2 S7 |
| SI2 I 2.2 | Identify & upgrade low carbon infrastructure & assets | P2 |

## SPA 1 SI3 Fostering living lab for decarbonisation and resilience adaption

The initiative is to implement **carbon mitigation projects in UTM**. In terms of building, the new building should be designed with a **green building concept**, while the current building will be **retrofitted with green building features**.

The equipment will be upgraded to models with **higher energy efficiency**. On the other hand, the **renewable energy (RE)** supply will be increased by either self-generation or external procurement.

UTM will also **invest in low-carbon UTM fleets**, such as electric vehicles powered by RE, and infrastructure related to low carbon mobility. **Carbon off-setting projects** such as planting trees with high carbon sequestration rates will be implemented as well.

**Objectives:**

1. To raise awareness among community and stakeholders.
2. To evaluate campus adaptation and reflection.
3. To experiment innovative and integrated technological solutions with campus community involvement.

**Initiatives:**

| | | |
|---|---|---|
| SI3 I 3.1 | Demonstrate technological solution & nature-based solution | P3 |
| SI3 I 3.2 | Build awareness & monitor community acceptance | P1 |

# SPA 2 ECOSYSTEM RESILIENCE

Water Noise Air Biodiversity

## SPA 2 SI1 Leveraging natural resource to improve preparedness and resilience

The initiative is to **establish an inventory data and develop a reporting system** for all aspects of water, biodiversity (flora and fauna), noise pollution and air quality in UTM.

These include **water** quality, water supply and **wastewater** facilities, **biodiversity** database, identifying **noise** producing equipment in terms of its type, number, location, electrical **power consumption** and its manufacturer's specifications on sound level emission.

**Objectives:**

1. To develop a database information system for ease of water environment reporting.
2. To establish a biodiversity database based on species diversity and abundance.
3. To identify noise level in teaching and learning facilities and working areas.
4. To develop a database information system for air quality reporting across all campuses of UTM.

**Initiatives:**

| | | | |
|---|---|---|---|
| SI1 I 1.1 | Develop climate preparedness & campus resilience action plans | P1 S6 | 13 |
| SI1 I 1.2 | Establish inventory baseline data & reporting system | P1 S7 | 15 |

## SPA 2 SI2 Securing resource and increase rate

The initiative is **to enhance the use of other water resources** in UTM which include ground water, rainwater harvesting and wastewater reclamation.

The existing **UTM's biodiversity database (UTMEco)** which has been used as part of biodiversity inventory can be improvised. Currently, there are about more than **4000 records of species recorded** in UTMEco.

Additionally, the existing **maintenance and fault reporting software or one-stop centre UTM complaint website** can be **improvised** to incorporate noise level issues (or nuisance) and other pollutants in UTM.

**Objectives:**

1. To enhance the use of alternative water resources for appropriate application.
2. To apply and improvise UTMEco as the mainstream of biodiversity database.
3. To provide an efficient communication channel of noise level issues among the consumers, administrators, and facility maintenance party in UTM.

**Initiatives:**

| | | | |
|---|---|---|---|
| SI2 I 2.1 | Enhance alternative resource consumption & built design | P2 ST4 | 12 |
| SI2 I 2.2 | Provide a one-stop communication platform for efficient fault reporting | P2 | 6 14 |

## SPA 2 SI3 Establishing conservation, research, and education

The initiative is to **reduce water consumption in UTM** through water saving initiatives which include awareness programmes, installation of water saving devices/fittings and reduction in non-revenue water.

As part of UTM, **ecosystem zoning** is helpful to plan and manage the natural and built resources of campus. In response to UTM development, ecosystem zoning is the way forward **to balance the natural and built environment** of UTM towards sustainable development.

Additionally, the initiative is to **incorporate noise in UTM's Master Plan** so that potential noise issues or nuisance will be considered in its development project or taken into the account in its development planning as early as its initial design stage.

**Objectives:**

1. To promote water conservation practices at UTM.
2. To provide ecosystem zoning based on the ecosystem functioning and significance.
3. To promote UTM's biodiversity as an ecotourism/ edutourism product and attraction.
4. To implement that noise level of any development of facilities, installation and operation of noise producing equipment in UTM, conforms to the latest noise standards

**Initiatives:**

| | | | |
|---|---|---|---|
| SI3 I 3.1 | Promote edutourism & open campus towards space sharing accessibility | P1-P3 | 11 |
| SI3 I 3.2 | Engage on conservation, preparedness & resilience programme that outreach to stakeholders involvement | P1-P3 | 11 |

# SPA 3 SUSTAINABLE PRODUCTION & RESPONSIBLE CONSUMPTION

Life Cycle Analysis | Product Innovation | Green Procurement | Smart Waste Monitoring | Awareness

## SPA 3 SI1 Building a knowledge driven smart community

The initiative is to provide a **one-stop platform for reporting on waste consumption and recycling activities** in terms of data with the additional input on **best practices across multiple units** offering unprecedented insights and solutions towards local, regional, and global sustainability challenges.

These data to be utilized to perform **Life Cycle Analysis (LCA)** and further develop **Zero Waste Index (ZWI).**

### Objectives:

1. To develop a trusted platform that enables accessibility and sharing of research data and increase visibility on data collection to improve the status-quo of waste management towards Zero Waste or Circular Economy.
2. To strengthen and improve the existing in-house waste tracking and monitoring mechanism by incorporating smart elements.

### Initiatives:

| | | | |
|---|---|---|---|
| SI1 I 1.1 | Provide a one-stop platform to perform Life Cycle Analysis (LCA) and further develop a Zero Waste Index (ZWI) | P2-P3 ST4 | 13 |
| SI1 I 1.2 | Develop smart & traceable waste tracking & monitoring mechanism | P1-P3 S6 | 11 |
| SI1 I 1.3 | Develop technological innovations to enhance waste prevention & recovery | P1-P2 | 9 |

## SPA 3 SI2 Nurturing sustainable lifestyle@UTM

The initiative is about gearing Universiti Teknologi Malaysia (UTM) for **Triple Win- for the People, for the Profit and for the Planet**.

Coherent with the national and international agenda, UTM will be leading by example to **break the habit and transitioning from business-as-usual to an outstanding sustainable entity** providing transparent reports on this agenda to the local and federal government.

### Objectives:

1. To promote transition towards sustainable system, behaviour, and practices in UTM.
2. To enhance initiative transformation to produce valuable products.

### Initiatives:

| | | | |
|---|---|---|---|
| SI2 I 2.1 | Enhance campus operation measures with community & stakeholders outreach | P1-P2 | 17 |
| SI2 I 2.2 | Facilitate responsible consumption initiative to increase value chain | P1-P2 | 12 |

## SPA 3 SI3 Spearheading Sustainable Activities

The initiative intends **to develop UTM as an outstanding agent of change** in addressing, by **connecting people, environment, products, and services** and providing maximum transparency to both UTM community and outsiders on its best practices in sustainable projects.

### Objectives:

1. To enhance CSR projects from industries/corporate.
2. To enhance initiative transformation to produce valuable products.

### Initiatives:

| | | | |
|---|---|---|---|
| SI3 I 3.1 | Develop Green Procurement guideline for product, material & services | P2-P3 | 16 |
| SI3 I 3.2 | Accelerate research & innovation through Green Funds, Grants & Endowment | P1-P3 | 17 |

# SPA 4 HEALTH & WELL-BEING

Life balance | Well-being Index | Balanced Nutrition

## SPA 4 / SI1 — Improving a healthy, productive, and conducive campus life

This initiative aims to provide **instruments in measuring the quality of life** for staff via survey index by Registrar.

Develop programme and awareness campaign for staff to **improve stability in health and well-being.**

Establish **UTM Well-Being Index** and determine its desired outcome.

### Objectives:

1. To analyse and categorise of well-being index into three; low, moderate, and high wellbeing.
2. To provide constructive feedback for the 3S well-being committee for review and improvement.
3. To analyse and categorise of well-being Facilities inside UTM and provide constructive Campus Well-being Map.

### Initiatives:

| | | |
|---|---|---|
| SI1 I 1.1 | Establish UTM Well-Being Index with enhancement programme | P1 ST4 |
| SI1 I 1.2 | Produce campus well-being map | P1 S2 & S3 |

## SPA 4 / SI2 — Empowering 3S (*Sihat*, *Selamat*, *Sejahtera*) committee

Involvement of the 3S wellbeing committee in the **planning, enforcement, advisory, monitoring, and reporting of UTM wellbeing initiatives.**

Provide and recommend **evidence-based intervention for well-being initiatives.**

Action **adviser for well-being initiatives** to the university management.

### Objectives:

1. To empower and recognise the role of the 3S committee in the management and implementation of well-being initiatives.
2. To coordinate the committees, departments, and offices for the implementation of well-being.
3. To empower support programmes and coordinate the committees, departments, and offices for the implementation of well-being initiatives programmes.

### Initiatives:

| | | |
|---|---|---|
| SI2 I 2.1 | Recognise 3S (*Sihat*, *Selamat*, *Sejahtera*) committee for initiatives coordination | P1 S6 |
| SI2 I 2.2 | Provide support & recommend evidence-based intervention | P1 SP3 |

## SPA 4 / SI3 — Executing 3S programmes and carnival

Organize Carnival 3S to **promote 3S practices in the Universiti Teknologi Malaysia** community among staff, students, and residents around the campus.

Including various activities and programmes that **lead to the practice and culture of 3S.**

**Collaboration network** with ministries, institutions, organizations, and external organizations related to 3S.

### Objectives:

1. To create awareness or enhancement programmes based on the level of the well-being index to improve the quality of life for UTM communities.
2. To provide exposure to UTM residents about the importance of taking care of self-health and the environment.
3. To provide exposure to UTM residents about the importance of taking care of self-health with healthy food and balance nutrition.

### Initiatives:

| | | |
|---|---|---|
| SI3 I 3.1 | Increase participation & accessibility to programme to culture 3S | P1 |
| SI3 I 3.2 | Create a model food campus that is health-promoting, ecologically minded, economic & nutrient balanced | P1 |

# SPA 5 SDGs LOCALISATION

Capacity building | Engagement | Tools & Execution | Support & Planning Framework

## SPA 5 SI1 Developing capacity building and engagement implementation plan

Identify talents and experts in various SDGs specialization.

Provide training, guidance, and development pathway for stakeholders' upskilling.

Promote Sponsorship Programme to support Engagement initiatives.

Empower research centers, center of excellence to create sustainable certification programmes.

Encourage multi-stakeholder partnership in the establishment of living labs, and volunteer groups/ clubs).

**Objectives:**

1. To empower stakeholders in understanding SDGs, localising SDGs.
2. To establish collaboration in the implementation of the initiatives.
3. To assess the effectiveness of localised SDGs implementation
4. To increase the number of students and staff completing SDG training/courses.

**initiatives:**

| | | |
|---|---|---|
| SI1 I 1.1 | Identify talents & experts to guide & plan execution towards localising SDGs | P1 ST1 |
| SI1 I 1.2 | Plan training, certification, & capacity-building programmes | P1-P3 ST3 |
| SI1 I 1.3 | Promote sponsorship programme to encourage multi-stakeholder engagement | P1-P3 ST4 |

## SPA 5 SI2 Establishing UTM-SDG localisation

Selection of key indicators based on the previous indicators shortlisted by UTMCS.

Assess new focus areas and develop indicators based on the gap analysis.

Identifying relevant SDGs according to the niche of each PTJ.

**Objectives:**

1. To review and streamline the roles of PTJs in the process of SDG Localisation.
2. To embrace the spirit of SDG by "localising" the indicators.
3. To establish UTM-SDG Localisation Agenda to guide the implementation process.

**initiatives:**

| | | |
|---|---|---|
| SI2 I 2.1 | Finalise key indicators and identify new indicators that are relevant to establish action plans on localising SDGs | P2-P3 ST5 |
| SI2 I 2.2 | Consolidate roles & responsibilities of UTM's PTJ (Faculties, CTLD) on SDGs | P2-P3 |

## SPA 5 SI3 Establish data-driven instrument to improve data sharing and Open Science

This initiative aims to enhance evidence-based policy formulation.

Develop open data guidelines to ensure that open data is fundamentally accessible, reliable, reusable, comprehensive, comparable, and interoperable.

Expand the Open Science / Open Data Service to all faculties to facilitate more data sharing.

Each faculty and COEs to provide Application Programming Interfaces (APIs) for sharing real-time and aggregated data.

**Objectives:**

1. To evaluate and adopt appropriate instruments and mechanisms for data sharing implementation.
2. To enhance data usage to improve analysis as well as optimise machine-readable data.
3. To provide more Open Data Services/Open Science to increase usage and facilitate data sharing by all faculties.

**initiatives:**

| | | |
|---|---|---|
| SI3 I 3.1 | Integrate data gathering | P2-P3 |
| SI3 I 3.2 | Develop an effective monitoring dashboard & feedback assessment | P2-P3 |

# SPA 6 NETWORK & PARTNERSHIP

Volunteerism | Industry | Government | Academia | Civil Society

## SPA 6 SI1 — Promoting leadership in sustainability through local, global and alumni partnership

This initiative aims to strengthen networking and partnership strategies through effective engagement.

This proposed initiative intends to strengthen networking and collaboration initiatives through effective participation of UTM's quadruple helix synergy partner focusing on the UTM campus sustainability agenda.

This initiative aims to bring more notable achievements via networking and partnership to sustain university growth.

### Objectives:

1. To create international collaborations enabling academics and students from some of the world's top universities to work together on issues of global importance.
2. To strengthen collaboration with local to promote SDGs initiatives through the university's media platform and international industry players.
3. To produce corporate communication and media plan, marketing kit and digital media materials emphasizing on efforts to sustain networking and partnership between UTM and quadruple helix entities.

### Initiatives:

| | | |
|---|---|---|
| SI1 I 1.1 | Foster strategic engagement & serve as hub of collaboration addressing global challenge | P1-P3 ST3 |
| SI1 I 1.2 | Invest in University Sustainable Programme while incorporating ESG criteria | P1-P3 SP4 |

## SPA 6 SI2 — Strengthening UTM brand and visibility to enhance global reputation

Co-supports the current UTM brand and visibility enhancement towards UTM sustainability agenda until 2030.

Via these initiatives, we seek to continuously improve the University's brand and visibility at both local and global levels.

This initiative aims to promote effective internal and external partnership through strategic communication.

To drive University Sustainable Programme and promote high impact content through new media platforms.

### Objectives:

1. To support co-branding programmes and networking activities related to SDGs
2. To broaden UTM visibility and brand (SDGs Initiatives)
3. To increase UTM expert visibility to enhance global reputation
4. To have link exchange from our partners and collaborators websites.
5. To ensure all staff update personal websites, google scholar, actively using digital platforms for promotional activities with a niche area on sustainability.
6. To strategise on digital marketing and visibility in developing high impact digital content

### Initiatives:

| | | |
|---|---|---|
| SI2 I 2.1 | Develop UTM's SDGs Awareness Index | P1-P3 SP5 |
| SI2 I 2.2 | Promote high impact content through new media platforms | P1-P3 ST4 |
| SI2 I 2.3 | Improve reputation and impact ranking | P1-P3 SP6 |

## SPA 6 SI2 — Emphasising on high impact quadruple helix CSR project

These initiatives to improve academic reputation through boosting global eminence.

To establish database GLCs Industry which apply CSR Government Index.

These initiatives aim to comply with the CSR Government Index and are given a yearly fund to achieve this initiative.

### Objectives:

1. To enforce SPEED in High Performance Delivery via strategic alliances (Smart Partnership).
2. To create SDGs database platform.
3. To identify GLC that suitable for engagement of CSR programme.
4. To engage with the GLC for volunteerism programme.
5. To propose a programme with the GLC identified in the database.
6. To strategise criteria needs based on the selected type of ranking.

### Initiatives:

| | | |
|---|---|---|
| SI3 I 3.1 | Establish database GLCs Industry which apply CSR Government Index | P1-P3 SP7,ST5,SP8 |

DELL

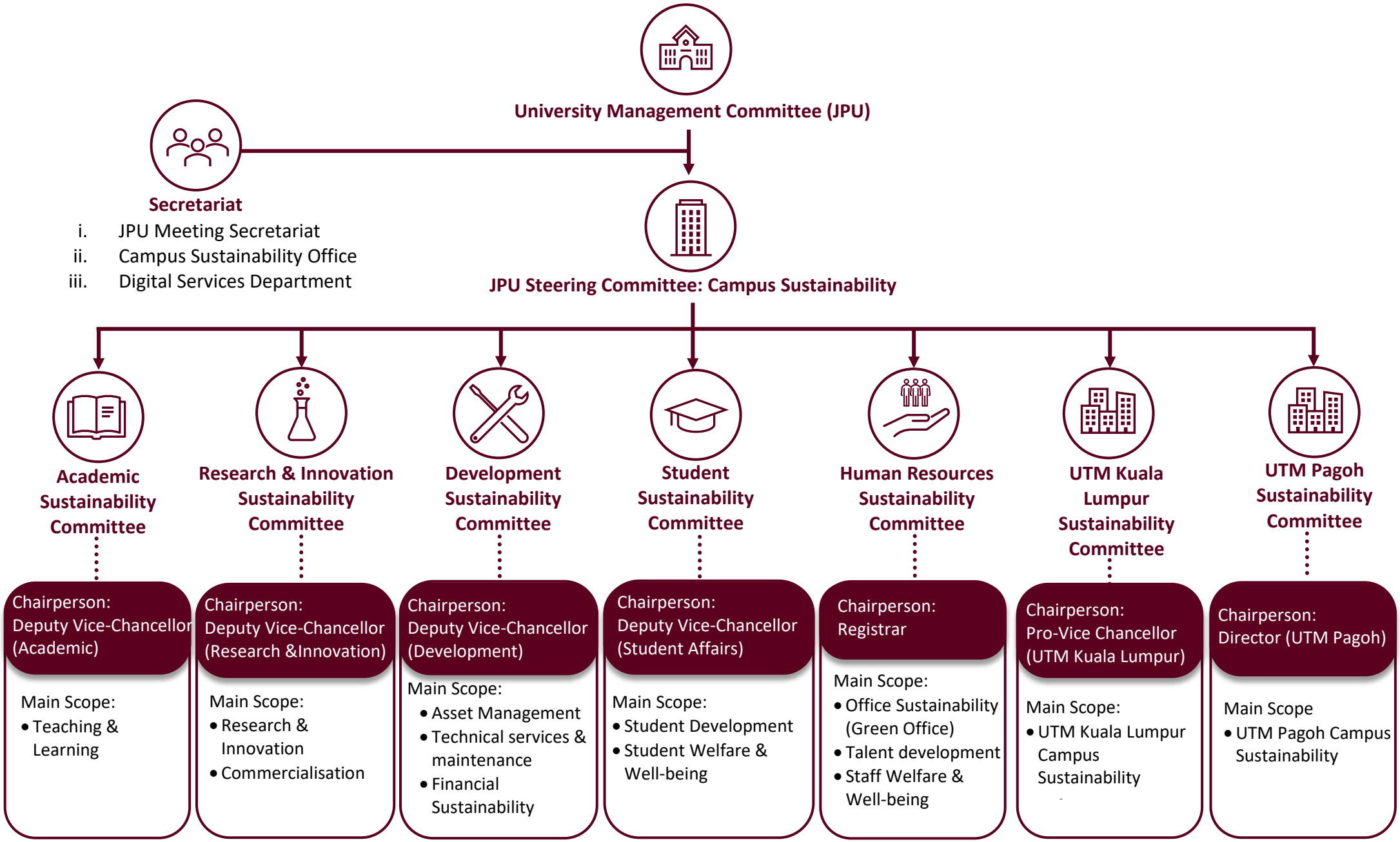
04

# GOVERNANCE STRUCTURE

# Governance Structure

UTM is committed towards sustainability. To achieve this, the university's governance needs to be strengthened through various efforts on all levels of management, including PTJs, staff and our stakeholders, the students. As illustrated in page 53, all entities in the new proposed structure of *Jawatankuasa Pemandu JPU: Pelestarian Kampus* will be involved with the implemetaion and monitoring of UTM

**“University's governance needs to be strengthened through various efforts from top management levels, delegating to PTJs staff and our stakeholders, the students.”**




***Pending approval (Feb 2023)**

05

# IMPLEMENTATION OF THE BLUEPRINT

# IMPLEMENTATION OF THE BLUEPRINT

## Teaching & Learning

Encouraging adaptable and highly accessible educational platform is part of ensuring a sustainable learning environment by having **Massive Open Online Courses (MOOCS) and exclusively online course** either via Micro-Credentials or Online Distance Learning as means to enhance capacity building, upskilling, and reskilling for life-long learning.

**Leading engineering and technology university** by embedding complex problems, blueprint initiatives in courses or part of teaching materials.

Involving students in **campus *Living Lab*** as part of hands-on and engaging activities by improving implementation through research findings and learning experience.

Incorporating sustainable education to ensure that students and curriculum are **future-ready and adaptable to any changes in the future**.

Promoting knowledge transfer through sustainable lifestyle and engaging activities to create **opportunities for students of diverse backgrounds and capabilities** to adapt in the community.

## Research & Innovation

**Diversifying adaptable research** for *Living Lab.*

Emerging **knowledge and knowledge transfer** from research findings and products to implement and support blueprint initiatives.

**Innovating solutions** as the new UTM tagline to inspire new approaches to sustainability and innovating solutions from research-driven approach.

Introducing **Fantastic 4** as significant themes.

Sharing achievements and performance via *UTM News Hub*, *UTM Nexus*, HEP bulletins, and sustainability reports.

Promoting **quadruple helix approach** involving various stakeholders to reach out to UTM alumni for smart partnership through research and innovation, so we can gain a better understanding of the complexities and interconnections of sustainability issues.

Fostering **innovation and research** to continuously improve, make progress, and sustain.

Encouraging **cross disciplinary approach** to create diverse perspectives and expertise to tackle sustainability challenges.

# IMPLEMENTATION OF THE BLUEPRINT

## Empowering Campus Citizen

Focusing on a **holistic Higher Education Institutions (HEIs) development** by instilling sustainable DNA to create cultures that value inclusivity, health, and nurture positive work environment at all levels.

Cultivating **Speed, Collaboration, and Resilience work culture** to motivate UTM citizen to contribute their best.

Focusing on developing and refining **core competencies** to stay ahead of the curve by investing in trainings and development programmes.

Accessing current **resources and capabilities** by identifying areas for improvement and investing in technology, infrastructure, and procurement.

**Moving at functional level** by prioritising and encouraging continuous improvement.

## Digitalisation

Utilising **smart and efficient** infrastructure and operation.

Promoting **knowledge driven community** for smart consumption.

Empowering campus citizen by providing platforms **for reporting, engagement, and resilience plan.**

Emphasising on **digitalisation** to assist organisations in implementing sustainable practices more efficiently and improving resource utilisation and reducing emissions.

Promoting digital work lifestyle data sharing and dashboard towards **digitalised students' learning experience**.

## Finance & Recognition

Empowering **UTM endowment and zakat**.

Promoting **ESG criteria** to evaluate investment.

Investing in latest **tools, processes, and existing streamlining system** to conduct good research and education programmes for the long run to generate sustainable income.

Encouraging **impactful networking** (e.g., MYSUN, UTM SDSN) and **Consortium Global positioning and reputation** (e.g., THE Impact ranking, QS ranking etc.) to boost UTM performance and its impact in sustainability effort aside from helping to point out the gap for improvement.

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