

Universiti Sains Malaysia

5-YEAR SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent





SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent

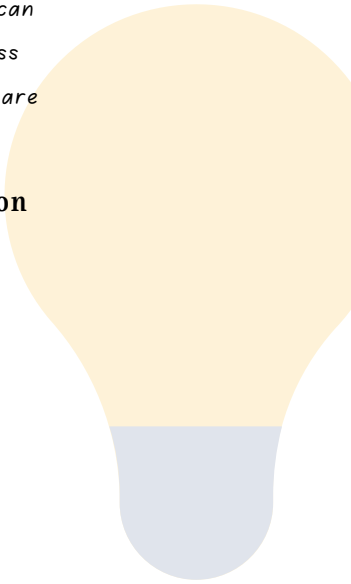


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List of Acronyms

AV	Active vehicle
BJIM	Division of Industry & Community Network
CDAE	Centre for Development of Academic Excellence & Student Development
CGSS	Centre for Global Sustainability Studies
CIC	Centre for Innovation and Consultation
CV	Curricular Vitae
DVC (AI)	Deputy Vice Chancellor (Academic & International)
DVC (SDI)	Deputy Vice Chancellor (Sustainable & Institutional Development)
DVC (RI)	Deputy Vice Chancellor (Research & Innovation)
DVC (SA)	Deputy Vice Chancellor (Student Development Affairs & Alumni)
EV	Electric vehicle
HDC	HEBAT Development Centre
HR	Human Resource
ICAP	Industry/Community Advisory Panel
IEG	Institutional Education Goal
IPS	Institute of Postgraduate Studies
JKPU	Jawatankuasa Pengurusan Universiti
JPPA	Jabatan Pembangunan & Pengurusan Aset
Ko-K	Centre for Co-Curricular Program
KS	Kampus Sejahtera
LT	Long term
MKU	Majlis Kelestarian Univesiti
MOOC	Massive Open Online Course
MOU	Memorandum of Understanding
MT	Medium term
NGO	Non-Governmental organization
OBEI	Overall Building Energy Index
OSH	Occupational Safety and Health
PPKT	Centre for Knowledge, Communication & Technology
PTJ	Pusat Tanggungjawab
PTI	Pusat Transformasi Insan
RCMO	Research Creativity & Management Office
SBS	School of Biological Sciences
SDG	Sustainable Development Goals
SOP	Standard Operating Procedure
ST	Short term
SERP	Student's Environmental Responsibility Policy
UKKP	Occupational Safety & Health Unit
USAINS	USAINS Holding Sdn. Bhd.



"A sustainable world is one where people can escape poverty and enjoy decent work without harming the earth's essential ecosystems and resources; where people can stay healthy and get the food and water they need; where everyone can access clean energy that doesn't contribute to climate change; where women and girls are afforded equal rights and equal opportunities"

UN Secretary-General Ban-Ki Moon

SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent

Foreword from Vice-Chancellor

**Professor Dato' Dr. Faisal Rafiq
Mahamd Adikan, FASc.**



The “Sustainability Action Plan 2021-2025” calls for a systemic institutional adoption of the principles and practices of sustainability integrated throughout Universiti Sains Malaysia’s (USM) mission via institutional change, teaching, research, community and industry initiatives, and green campus. Being awarded as the sole recipient for APEX university status by the Malaysian government, USM continues to deliver, realigning and positioning itself at the forefront of many sustainability-led initiatives.

The University has a clear vision and mission to transform its sustainability agenda. Nevertheless, challenges of compliance and commitment remains. Compliance and commitment to realize sustainability agenda require concrete and practical measures as well as the appropriate enabling environments with broad alliance of students and staff working together to secure the sustainability future we all desire. Hence, a Sustainability Action Plan log frame that focuses on ACTION is required. The action must involve institution-wide implementation of 17 Sustainable Development Goals (SDGs).

Upholding to five guiding principle for sustainable development on campus; - living with our environmental means; achieving sustainable economy; ensuring progressive, equitable and healthy society; enhancing sound science-policy interactions; and promoting good governance, USM continues to take its stride to ensure that Sustainable Development will continue to be its leading and defining character. On a global level, it has broadened its outreach to lead and assist in growing ideas on sustainability and engaging with communities both far and near
We lead!

Professor Dato' Dr. Faisal Rafiq Mahamd Adikan, FASc
Vice-Chancellor

Foreword from Deputy Vice-Chancellor



Professor Dr. Md Roslan Hashim


Sustainability and Institutional Development

USM has long since believed that education institution is the best medium to cultivate social change for achieving sustainability. Being the sole recipient of the Accelerated Programme for Excellence (APEX) award in Malaysia due to its strategy in transforming higher education for a sustainable tomorrow, USM continues to embrace a holistic sustainability transition by mainstreaming social, economic, and environmental aspects into its five domains namely students, academics, research, community/industry, institution, and environment.

To remain true to its vision, a proper and holistic transformation of Higher Education for a sustainable tomorrow is imperative to mainstream sustainability element seamlessly across the campus ecosphere in a timely and sustainable manner. Thus, the 5-Year Sustainability Action Plan 2021-2025 has been developed to outline the goal, target/outcome, intervention/output, responsibility, impact, action plan, and timeline for sustainability related activities by adopting the global sustainability agenda, namely 17 Sustainable Development Goals as the guidance to provide multiple perspectives to the university to achieve a sustainable future.

This document will help USM to ensure that sustainability related activities can be planned, carried out, and monitored in a seamless and systematic manner as well as to ensure that any on-going activities can be sustained over time. Without a proper and systematic planning, resources might go to waste and the university has to go back to the drawing board! It is hoped that the 5-Year Sustainability Action Plan can be a mean to assist the USM community to excel in sustainability leadership at the national and global level!

Professor Dr. Md Roslan Hashim,
Deputy Vice-Chancellor,
Sustainability and Institutional Development



"What we are doing to the forests of the world is but a mirror reflection of what we are doing to ourselves and to one another."

Mahatma Gandhi

SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent

Committee Members

Committee Members

Coordinator

- Associate Professor Dr. Saidatulakmal Mohd

Secretariat

- Mdm Sharifah Nurlalili Farhana Syed Azhar
- Mdm Diana Fariha Saad
- Ms Muzalifah Azmi
- Ms Siti Zanariah Zailan

Designer

- Mr. Nazrul Fitri Bin Ahmad

Institution

- Professor Dr. Asrul Akmal Shafie (L)
- Mdm Zanita Zakaria (A)
- Mr. Mohd Azizudin Mohd Sharif
- Ts. Dr. Mohd Hafiidz Jaafar
- Dr. Normaliza Abdul Manaf
- Professor Dato' Dr. Mohd Mokhtar Saidin
- Ts. Dr. Norhaniza binti Amil
- Dr. Nur Hana Binti Samsudin
- Ts. Dr. Sharifah Mashita Syed Mohamad
- Ms Siti Fairuz Mohd Radzi

Academics

- Professor Dato' Dr. Ahmad Farhan Mohd Sadullah (L)
- Professor Dr. Rosni Abdullah (A)
- Professor Dr. Abdul Karim Alias
- Associate Professor Dr. Azidah Abu Ziden
- Professor Dr. Adam Husein
- Associate Professor Dr. Zurinahni Zainol
- Associate Professor Dr. Ahmad Zulfaa Mohamed Kassim
- Dr. Mastura Azmi
- Associate Professor Dr. Siti Rohaida Mohamed Zainal
- Dr. Aidiahmad Dewa
- Mdm. Samsuriyati Syamsudin
- Mr. Ihsanul Anwar bin Shamsul Rahim
- Mdm. Noor Saerah binti Idris

Students

- Mr. Hazlan Bin Abdul Hamid (L)
- Dr. Suraiyati Rahman (A)
- Ts. Dr. Shahrizal Bin Nazri
- Dr Suzyrman Sibly

Committee Members

Committee Members

Research

- Professor Dr. Zainovia Lockman (L)
- Associate Professor Dr. Mohd Hazwan Hussin (A)
- Professor Dr. Lee Keat Teong
- Professor. Ir. Dr. Srimala Sreekantan
- Dr. Noor Adelyna Mohammed Akib

Community/ Industry

- Associate Professor Dr. Yeoh Fei Yee (L)
- Dr. Noor Khalidah Abdul Hamid (A)
- Tn. Hj Syed Yusof Syed Kecik
- Dr. Cheang Peck Yeng Sharon
- Ms. Fauziah binti Rastam
- Dr. Radieah Mohd Nor

Environment (Water)

- Professor Nor Azazi Zakaria (L)
- Associate Professor Dr. Mohd Remy Rozainy Mohd Arif Zainol (A)
- Professor Madya Dr. Foo Keng Yuen
- Dato' Aileen Tan Shau Hwai
- Ir. Ts. Dr. Chang Chun Kiat
- Dr. Phuay How Tion
- Mr. Mohd Fazli Yusof
- Mr. Muhamad Nurfasya Alias
- Mr. Syafiq Syaharuddin
- Ms. Siti Fairuz Juani
- Mdm. Nor Ariza Azizan

Environment (Mobility)

- Associate Professor Dr. Nur Sabahiah Abdul Sukor (L)
- Dr. Nadhrah A. Kadir (A)
- Associate Professor Dr. Ahmad Hilmy Abdul Hamid
- Dr. Diana Binti Mohamad
- Associate Professor Ir. Dr Abdul Naser Abdul Ghani
- Dr. Fadratul Hafinaz Hassan
- Dr. Abdul Rais Abdul Latiff
- Dr. Wan Mohd Muhiyuddin Wan Ibrahim
- Dr. Ong Wen Eng

Environment (Energy)

- Associate Professor Dr. Mohd Wira Mohd Shafiei (L)
- Associate Professor Ir. Dr. Mohamad Kamarol Mohd Jamil
- Associate Professor Dr. Mardiana Idayu Ahmad
- Dr. Faizal Baharum
- Mr. Mohd Salmi Ismail
- Dr Mohd Sukri Shafie
- Mdm. Siti Izaidah Azmi

Committee Members

Committee Members

Environment (Flora)

- Associate Professor Dr. Rahmad Zakaria (L)
- Associate Professor Dr. Asyraf Mansor (A)
- Dr. Farah Alia Nordin
- Associate Professor Dr. Nik Fadzly Nik Rosely
- Associate Professor Dr. Mohd Sayuti Hassan

Environment (Waste)

- Associate Professor Dr. Husnul Azan Tajarudin (L)
- Dr. Hadura Binti Abu Hasan
- Professor Dr. Hamidi Abdul Aziz
- Dr. Muhd Harris Ramli
- Associate Professor Dr. Mardiana Idayu Binti Ahmad
- Dr. Mohamad Fared Murshed
- Professor Dr. Mohd Azmier Ahmad
- Professor Dr. Mohd Suffian Yusoff
- Dr. Muaz Bin Mohd Zaini Makhtar
- Dr. Nor Habsah Md Sabiani
- Professor Dr. Norli Ismail
- Dr. Nurul Hana Mokhtar Kamal
- Associate Professor Dr. Puganeshwary Palaniandy
- Associate Professor Dr. Ridzuan Zakaria
- Dr. Rosnani Binti Alkarimiah
- Dr. Ng Theam Foo

Environment (Fauna)

- Professor Dr. Shahrul Anuar Mohd Sah (L)
- Dr. Nurul 'Ain Binti Elias
- Dr. Lim Lee Sim
- Dr. Nik Ahmad Irwan Izzauddin Nik Him
- Dr. Hasber Salim
- Mr. Mohd Abdul Muin Md Akil

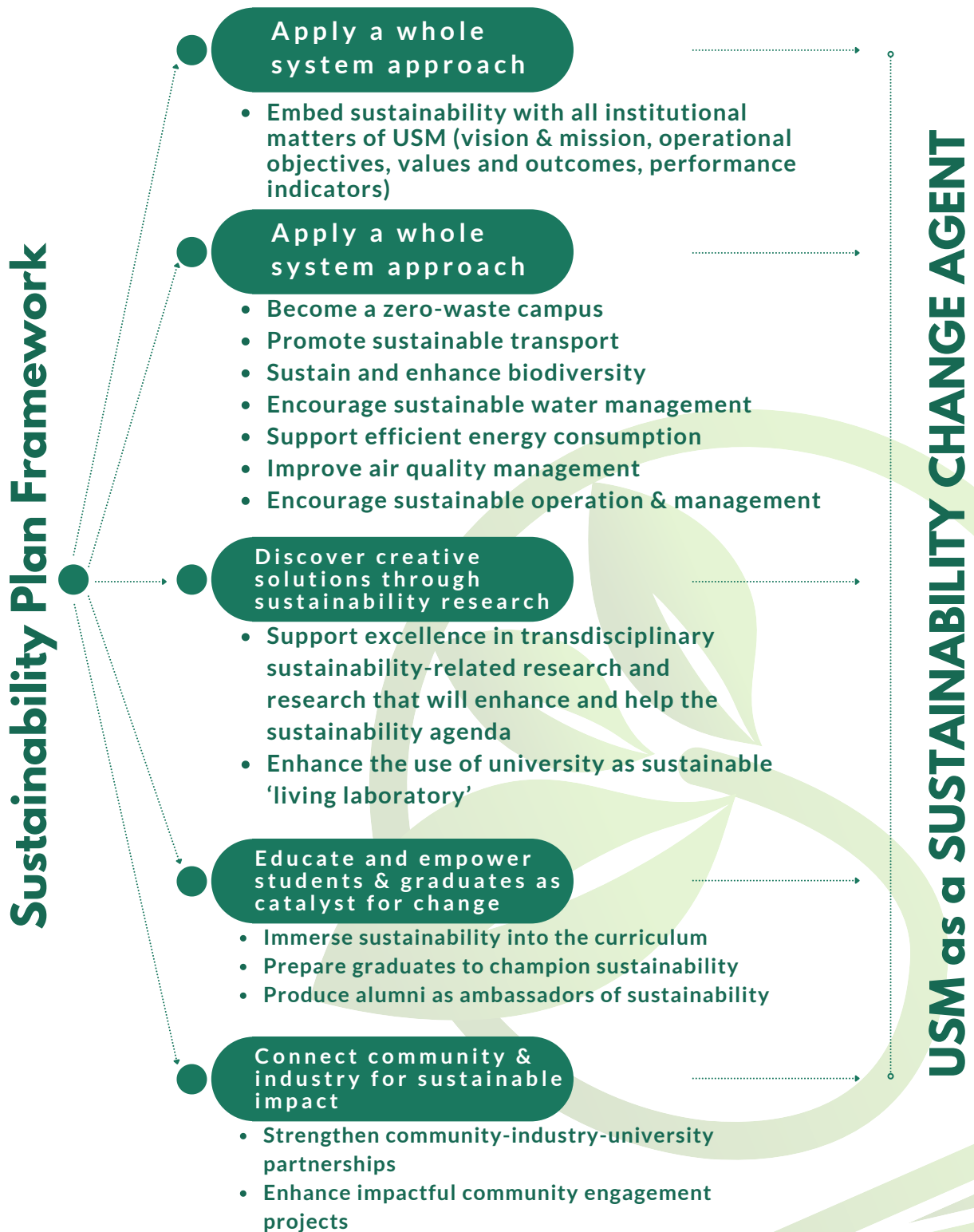
Environment (Air)

- Associate Professor Dr. Yusri Yusup (L)
- Associate Professor Dr. Mardiana Idayu Ahmad
- Associate Professor Dr. Lim Hwee San
- Associate Professor Dr. Hazrul Abdul Hamid

Environment (Noise)

- Dr. HERNI Binti Halim (L)
- Ts. Dr. Norhaniza Amil
- Dr. Nik Azimatolakma Awang
- Dr. Rosnani binti Alkarimiah

Framework



Objectives

- Acts as a guideline for sustainability implementation and sustainability agenda for USM to enhance sustainability commitment.
- Contributes to improving the reputation and visibility of USM as a university that embrace sustainability.
- Enables the creation of synergies among schools, units and departments in USM to inculcate and enhance sustainability culture.
- Responds to achieving the targets set under the United Nations Sustainable Development Goals (SDGs).

Focus areas



Institution



Academics



Students



Research



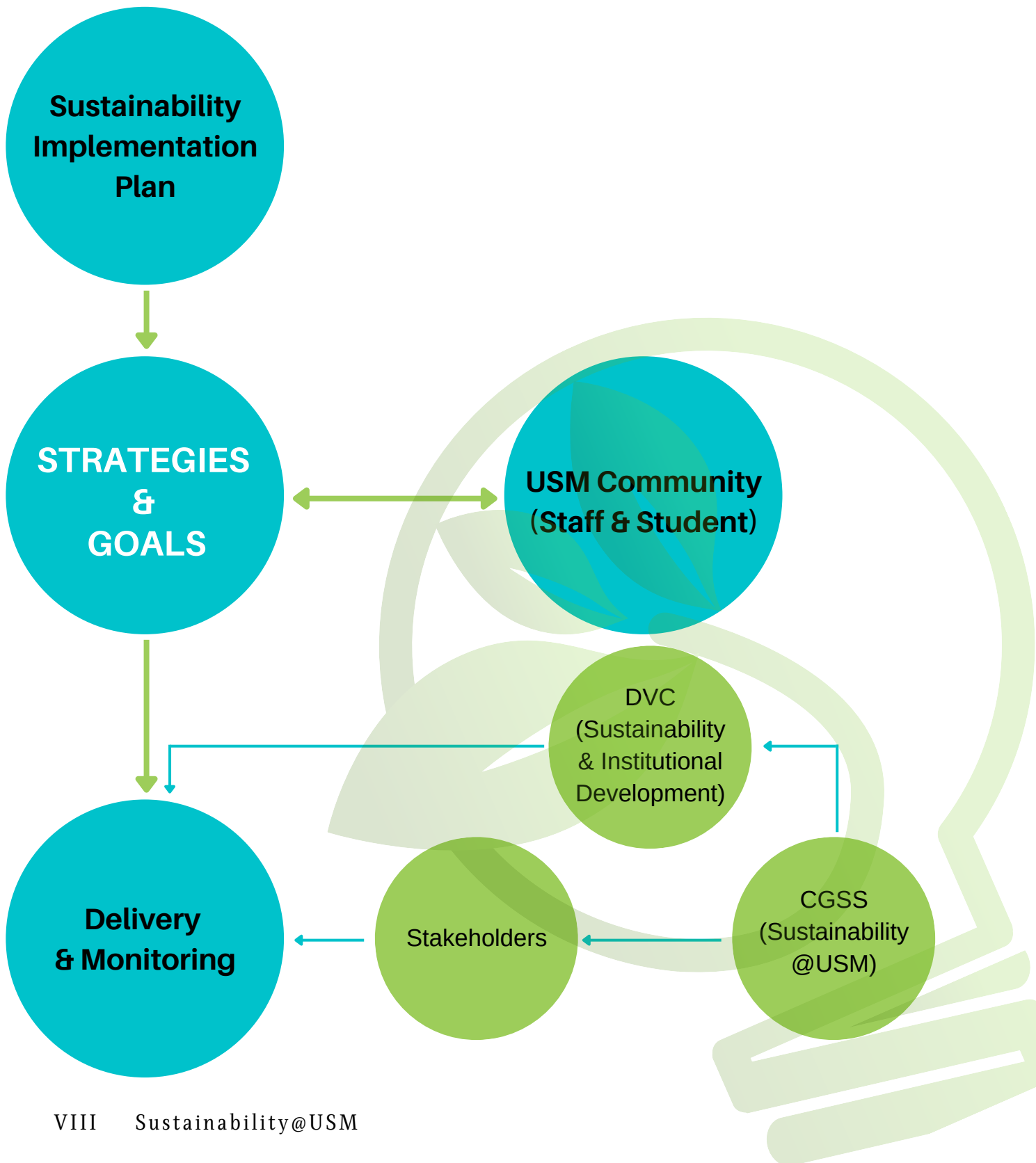
Environment



Community/
Industry

Process

‘University’s strategies to achieve long-term vision of integrating sustainability into the fabric of the university’



ACTION PLAN PHASES

Phase 1 (2021 - 2022)

Revision of institutional policies

Design curriculum for SDGs embracement

Develop strong sustainability research

Strengthen industry-community engagement

Development of environmental baseline data

Environmental awareness programmes

- Energy efficiency campaign
- Awareness on sustainable transport
- Waste awareness week
- Water conservation campaign
- Air quality awareness campaign

Phase 2 (2023 - 2024)

Equip operation and management in USM with Sustainability elements.

Going Green Green Procure Welfare and Wellbeing OSH

Academic programmes, research work and all teaching & learning experience infused with SDGs.

Students Alumni

Sustainability infused HEBAT agenda

Incorporate SDGs in research activities

Publications Living labs Laboratories

Multilevel approach & collaborative model of engagement

Industry Community

Collection and refinement of data through survey, location-based and GIS mapping

Noise Air Flora & Fauna

Approaches to manage and reduce environmental impacts

Water Energy Waste Mobility

Enhance sustainable campus infrastructure

Phase 3 (2025 and beyond)

Sustainable Operation & Management

Sustainability Academic Goals

Sustainability-led research

Sustainable partnership for sustainable impact

Sustainability Database

Sustainable University

























Sustainable Behaviour & Values

- Efficient energy consumption
- Sustainable transport
- Zero-waste campus
- Sustainable water management
- Preparedness for air pollution episodes

TARGETS & ACTIONS WE'RE TAKING 2021-2025

TARGETS & ACTIONS


















STAKEHOLDERS


1	<ul style="list-style-type: none"> Continuous sustainability and SDGs training programme - One each year Sustainability awareness programme - One each year Sustainability research awareness roadshow - One each year Environmental awareness campaign - One each year Colloquium on sustainability involving alumni & experts by 2023 	DVC (AI) DVC (SDI) DVC (RI) DVC (SA) CDAE PTI RCMO CGSS KS HDC    
2	<ul style="list-style-type: none"> Revise existing sustainability policies by 2023 Policy on SDGs data by 2023 Develop policy for sustainability PLO by 2025 Student's Environmental Responsibility Policy (SERP) by 2025 Alignment of PTJ's research area with SDGs by 2023 	DVC (SDI) DVC (RI) DVC (SA) Registrar CDAE   
3	<ul style="list-style-type: none"> SOPs on Entrepreneurship (student entrepreneur, student incubator & social entrepreneurship) & Student Community Social Responsibility by 2025 Review of air pollution crisis SOPs by 2023 SOPs on waste management by 2022 	DVC (SA) DVC (SDI) HDC UKKP JPPA   
4	<ul style="list-style-type: none"> Platform for sustainability and SDGs data by 2023 Sustainability database by 2025 Promotion & recognition system based on sustainability excellence for students and staff by 2025 	DVC (SDI) PPKT CGSS JPPA Registrar      
5	<ul style="list-style-type: none"> Map courses and programmes to SDGs by 2023 Map co-curriculum programmes with SDGs by 2023 Measurement and analysis of student attributes on sustainability by 2025 10 micro-credential courses on SDGs by 2025 20 innovative complementary programmes for SDGs learning experience by 2025 	DVC (AI) CDAE IPS BPA HDC Ko-K  
6	<ul style="list-style-type: none"> MOOC for self study progression on sustainability and SDGs by 2025 Roundtable discussions with alumni on sustainability activities and ambassadors for sustainability by 2023 Improved syllabus for Research Methodology course to include SDGs elements by 2023 Multi-disciplinary Research-Infused Academic Programs and align them to sustainability by 2025 	DVC (AI) DVC (SA) CDAE HDC Ko-K IPS  
7	<ul style="list-style-type: none"> HEBAT economic oriented programmes and activities by 2025 Entrepreneurship training modules (social innovation & social entrepreneurship) by 2025 SDGs induced HEBAT database & dashboard by 2025 	DVC (SA) HDC  
8	<ul style="list-style-type: none"> 50% trans-disciplinary research programme implemented by 2023 50% publications / articles incorporating SDGs keywords by 2025 50% laboratories certified as sustainability lab by 2025 Creation of more than two USM living lab by 2025 25 SDGs tagging to USM researchers in their expert CV by 2025 	DVC (RI) RCMO Community/ Industry  

TARGETS & ACTIONS WE'RE TAKING 2021-2025

TARGETS & ACTIONS

STAKEHOLDERS

9	<ul style="list-style-type: none"> • 3 new community engagement programmes by 2025 • 75 external and 25 internal community projects by 2025 • 500 participants from community by 2025 • 1,250 participants from university (academics and students) by 2025 	DVC (AI) DVC (RI) BJIM     
10	<ul style="list-style-type: none"> • 60 industry speakers by 2025 • 300 students for industry engagement by 2025 • 80% of industry internship by 2025 	DVC (RI) BJIM Students  
11	<ul style="list-style-type: none"> • Noise map by 2025 • Air quality early warning system & air quality monitoring station by 2025 • Integrated monitoring system for environmental health by 2025 • Water station map by 2023 	DVC (SDI) CGSS PPKT JPPA UKKP  
12	<ul style="list-style-type: none"> • 20% reduction of water bill by 2023 • 30% usage of Rain Water Harvesting & reused pond water for toilets by 2025 • 100% usage of Rain Water Harvesting & reused pond water for gardening by 2025 • 70% reduction of missing water by 2023 	DVC (SDI) JPPA CGSS  
13	<ul style="list-style-type: none"> • 5% attainment of Energy Management Gold Standard (EMGS) certification by 2025 • 100% new building compliance to MS 1525:2007 by 2025 • 50% renewable energy generation by 2025 • 20% hybrid technology energy compliance for university vehicles by 2025 	DVC (RI) JPPA CGSS  
14	<ul style="list-style-type: none"> • 80% waste generation go to zero waste by 2025 • Explore the potential of biodiesel by 2025 	DVC (RI) JPPA CGSS  
15	<ul style="list-style-type: none"> • Control the number of vehicles through the adoption of traffic control systems by 2025 • 50% reduction of motor vehicles on campus by 2023 • 30% staff remain working remotely by 2023 • 50% increase of rental and refurbished bicycles by 2023 • 30% shaded pathway (including tree orientation) by 2023 	DVC (SDI) JPPA CGSS  



"There is a great need for the introduction of new values in our society, where bigger is not necessarily better, where slower can be faster, and where less can be more."

Gaylord Nelson

SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent



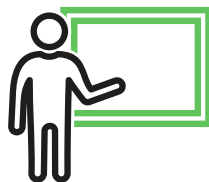
INSTITUTION

Embed sustainability with all institutional matters of USM (vision & mission, operational objectives, values, outcomes, performance indicators).

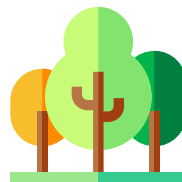
To apply all the 17 Sustainable Development Goals in the USM institutional aspects including



Administration and Governance



Teaching and Research

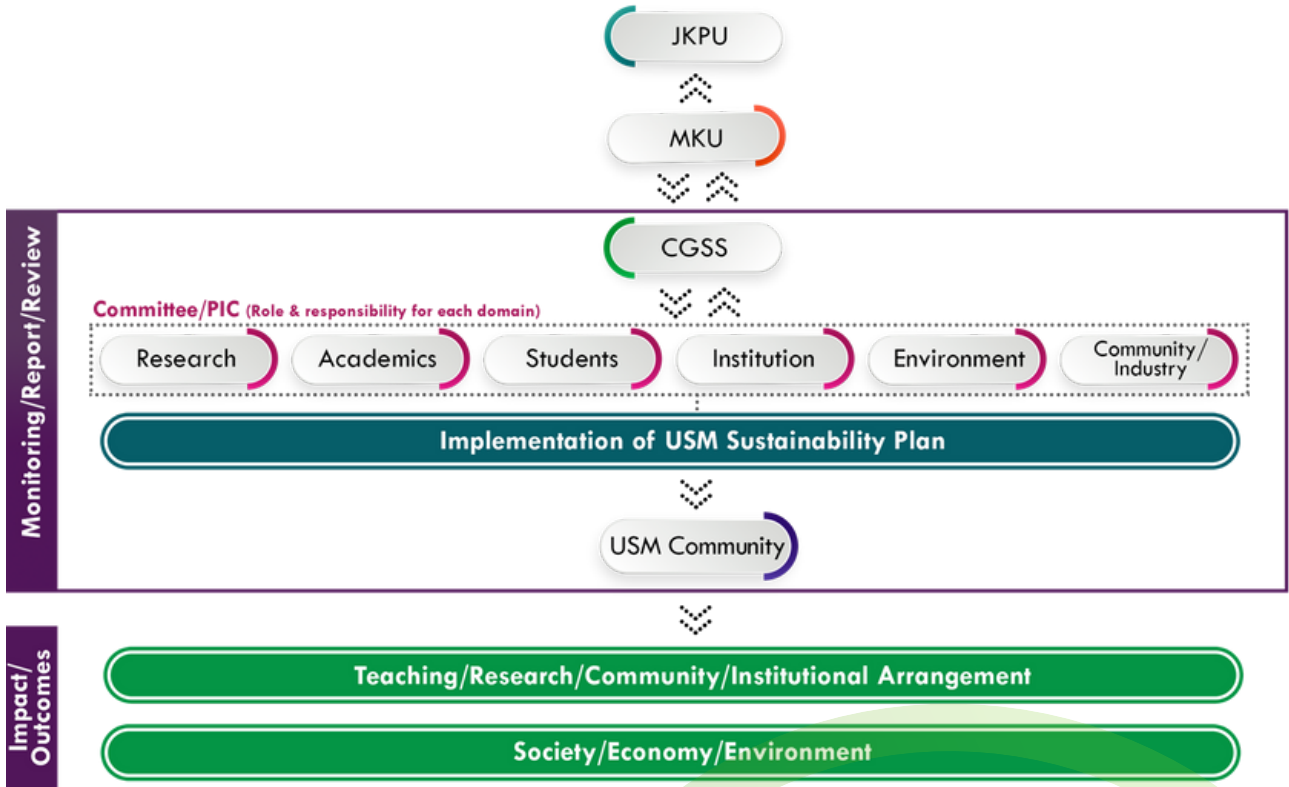


Environment and Climate

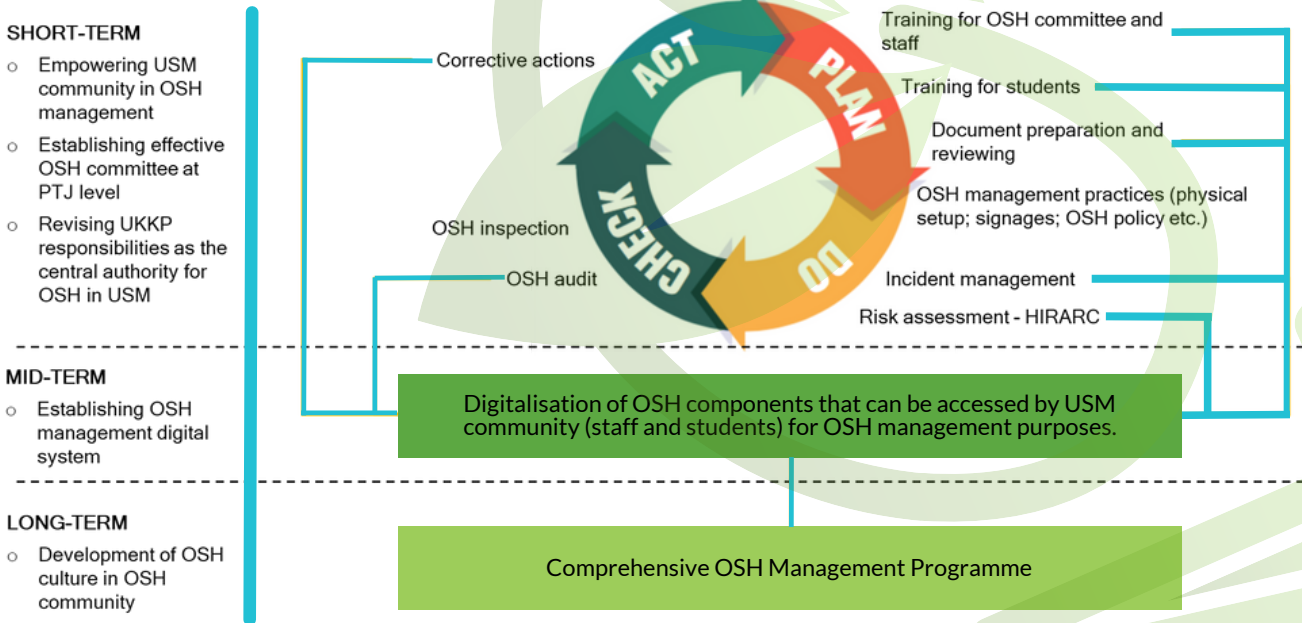


People and Society

GOVERNANCE STRUCTURE



5 YEARS SUSTAINABILITY PLAN FRAWORK - OSH



STRATEGIES & ACTION PLANS

Revise and review the institutional policies in USM to identify potential aspects that can be improvised by embedding sustainability elements.

Strategy 1

Output

- Policy Revision

Outcome

- Revise & review USM Sustainability Policy
- Embed sustainability with all institutional matters of USM
- Integrate sustainability throughout all activities

Stakeholders

Collaboration between CGSS and PUU, USM Top management, Collaboration between MKU and CGSS

Strategy 2

Engage and communicate with the USM stakeholders and community on the Sustainability Culture in the campuses.

Output

- Constant Engagement Session

Outcome

- Awareness on sustainability
- Promotion through institutional decision making
- Embed & foster (to strengthen) Sustainability Culture within Campus Community

Stakeholders

Collaboration between Pendaftar, Student Development Affairs and Alumni Division & PTI, CGSS, HOD

STRATEGIES & ACTION PLANS

Equip the operation and management in USM institutions with the sustainability elements.

Strategy 3

Output

- Sustainable Operation & Management

Outcome

- Going Green (Green Office, Green Desa & Green Space)
- Green Procurement
- Welfare & Wellbeing
- Occupational safety & health (OSH)

Stakeholders

Collaboration between CGSS, HOD & Penggawa, Bursary USM, Collaboration between USM Human Resource, Student Development Affairs and Alumni Division, USM Islamic Centre, PTJ, Pusat Sejahtera & Hospital USM, UKKP

Strategy 4

Monitoring the sustainability indicator and achievement on sustainability aspects to ensure the targeted objectives are achieved.

Output

- Sustainability Indicator and Monitoring Dashboard

Outcome

- Develop dashboard to monitor sustainability indicator & achievement
- Monitor sustainability indicator & achievement
- Report & review sustainability achievement

Stakeholders

Collaboration between CGSS & PPKT, Collaboration between Deputy Vice Chancellor for Sustainability and Institutional Development & CGSS, Collaboration between MKU & CGSS



ACADEMICS

Nurture USM students and alumni as embracers, champions and ambassadors of sustainability. All academic programs in USM will be infused with sustainability agenda; SDG laden learning experience for all USM students; All research outputs from students of USM being positively impactful for sustainability; and Ability to leverage on USM alumni as ambassadors of sustainability.



Design of academic programmes



Teaching & learning practices



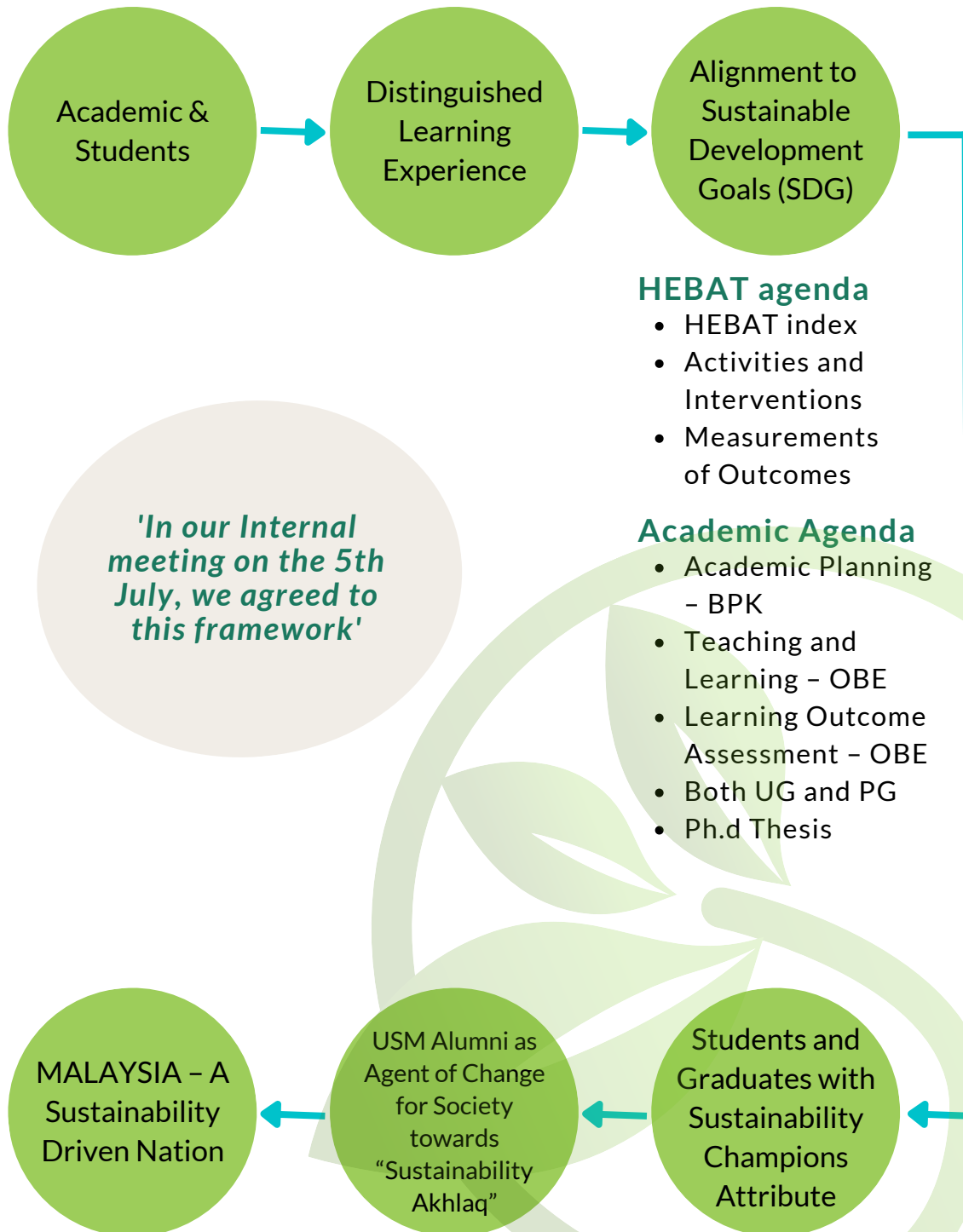
Research work of students



Alumni management

STRATEGIES

STRATEGIES & ACTION PLANS

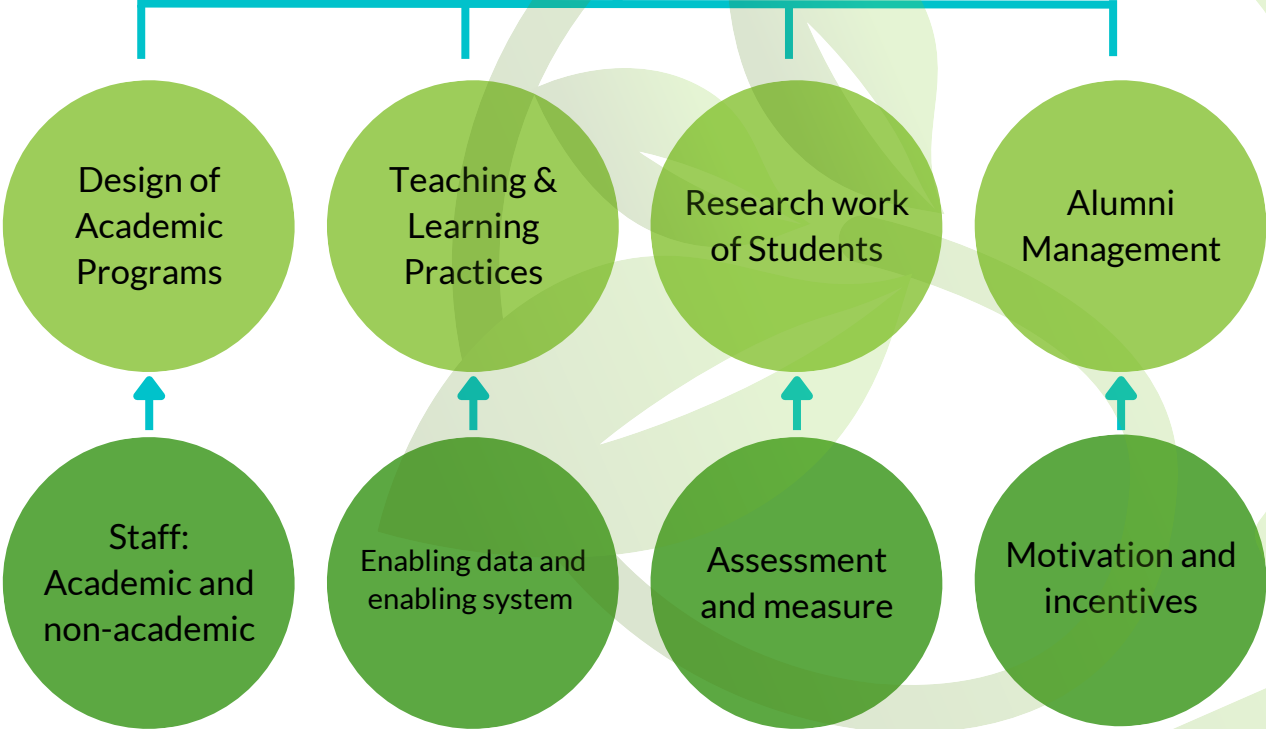




**TARGET:
SUSTAINABILITY ACADEMIC GOALS**

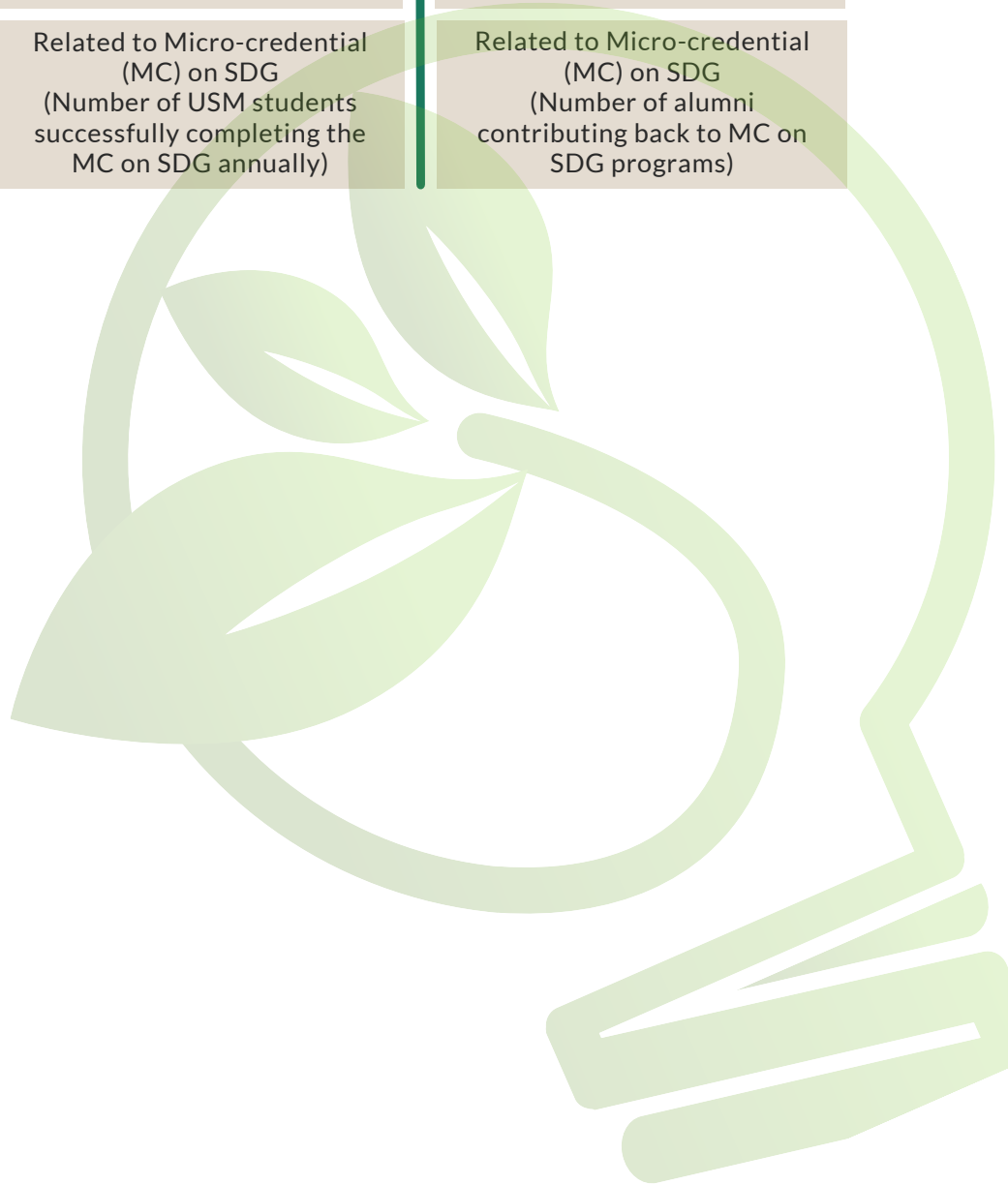
SUSTAINABILITY ACADEMIC GOALS

1. Achieving the USM Institutional Educational Goals (IEG)
2. USM becomes the agent of change for sustainability
 - USM students as champions of sustainability
 - USM Alumni as ambassadors of sustainability



PROXY INDICATORS FOR USM SUSTAINABILITY ACADEMIC GOALS

USM becomes the agent of change for sustainability	USM students as champions of sustainability	USM Alumni as ambassadors of sustainability
USM performance for SDG 4 in THE GIR for Quality Education improves	USM students are acknowledged globally to be the champions of sustainability	Numbers of alumni acknowledged as sustainability champions
USM academic programs are the leading programs supporting the sustainability agenda and upholding the IEG	The attributes of USM graduates embodies the sustainability spirit (sustainability akhlaq)	The contribution given back to USM by the alumni
USM's sustainability brand able to attract sustainability champions (students/collaborators, etc)	USM students and graduates are competent for the sustainability agenda	Number of companies led by USM alumni who promotes sustainability
Related to Micro-credential (MC) on SDG (Number of certificates (or micro-credits) attained by students, staff and public)	Related to Micro-credential (MC) on SDG (Number of USM students successfully completing the MC on SDG annually)	Related to Micro-credential (MC) on SDG (Number of alumni contributing back to MC on SDG programs)



STRATEGIES & ACTION PLANS

Output

- Mapping of courses/program to each SDG (both UG and PG programs)
- Policy for Sustainability PLO for all USM academic Programs
- An updated mapping of courses/program to each SDG
- Analysis of USM's student attributes on sustainability

Outcome

- Ability to identify the strength of USM academic programs in support of SDG
- Re-align academic programs to USM SDG niche
- All academic programs will contribute to SDG
- All students of USM will have elements of SDG as part of their learning attainment
- Improve general constructive alignment of all academic programs
- A new curriculum review baseline for all academic programs in USM
- Assist USM in its learning outcome attainment effort
- Ensure that USM students/graduates have competencies in SDG matters

Design of academic programmes

- Take stock of the present BPK and align them with the appropriate SDGs
- Introduce specific Program Learning Outcomes (PLO) for Sustainability (where needed)
- Re-design curriculum to have better alignment to the PLO on Sustainability and according to IEG
- Audit of PLO attainment on Sustainability and ascertain outcomes on student's attributes

Stakeholders

Government agencies, Industry Player, NGOs, USM

Research work of students

- Each PTJ align their research specialisation to SDG when attracting prospective students.
- The common research methodology course that is currently offered to all research students must introduce SDG as part of the problem statement
- Facilitate research work for undergraduates to promote more impactful sustainability research (through FYP and other means)
- Promote Multi-disciplinary Research-Infused Academic Programs and align them to sustainability agenda

Output

- SDG aligned research problem statements
- Improved syllabus for Research Methodology course
- Programs to motivate impactful SDG related research at UG level
- Introducing new research-infused

Outcome

- Getting bigger involvement from UG students to support SDG

STRATEGIES & ACTION PLANS

Output

- Micro-credential courses on SDGs
- Students at USM will be given a different perspective of life at USM – sustainability led
- innovative complementary programs for SDGs learning experience at PTJ and university level
- Create awareness and proactive program
- Mapping the proposed co-curriculum program with SDGs principles and agenda (part of paperwork)

Outcome

- Educate and build awareness on SDGs among students, staff and the public
- A different learning experience for USM students
- Creativity in infusing SDGs values
- All academic staff able to infuse SDGs materials in student's learning process
- Ko-K at USM is fully SDGs aligned

Teaching & learning practices

- Promote SDGs through Micro-credentials as the integrating factor for SDG initiatives at USM
- Ensure the Life@USM program meeting its outcomes
- Enrich complementary educational programs in USM to promote SDGs
- Provide adequate training to the academic staff on how to incorporate SDGs in learning sessions
- Align USM co-curriculum program with SDG principles and agenda

Stakeholders - Government agencies, Industry Player, NGOs, USM

Alumni management

- Alumni and student engagement on sustainability activities/ knowledge sharing through Alumni Ambassador (focal contact person on alumni matters) in each PTJ
- Embrace collaboration between schools and alumni in industries
- Continuous reporting through Alumni Bulletin
- Document alumni contribution at their work-place
- Roundtable discussion with potential alumni as ambassadors of sustainability
- Colloquium on sustainability in USM involving alumni and experts

Output

- Develop students (future alumni) who have the skills to create, define and succeed in the future careers and industries of sustainable societies
- Working strategically with alumni to create innovative solutions to sustainability challenges
- Create transparency communication progress and success
- Pool of potential candidates
- Generating ideas and strategies

Outcome

- Cultivate "Sustainability Akhlaq" and increases database profiles
- USM Alumni as agent of change and acquire the knowledge and skills needed to promote sustainable development
- Create a stronger network as well as trust in the university
- Promoting USM agenda on sustainability
- Promoting sustainability agenda



STUDENTS

Creating conducive ecosystem in developing HEBAT (Holistic, Entrepreneurship, Balanced, Articulate, Thinking) students to enhance sustainability champion attributes and akhlaq.

To create, develop and empower economic, social, and environmental consciousness among HEBAT students through accountable and sustainable practices to attain effective implementation and recognition

H E B A T Oriented Program and Activities



Social



Environmental



Economic

STRATEGIES & ACTION PLANS

Actual Plan

- Embedding Sustainability Goals in Students Centred HEBAT Framework
- Enhancement of HEBAT Flagship Programmes Development
- Institutionalize USM Standard Operation Procedure(SOP) in integratings ustainability in students'programmesand activities.
- HEBAT Flagship Program Empowerment and Implementation conducted by HDC/School/ Desasiswa/Students' Society
- HEBAT Dashboard, Recognition and Reporting

HEBAT

Economic

- Entrepreneurship
- Adaptability & Agility of HEBAT
- Student Social Innovation and Social Entrepreneurship

Social

- Student Community Social Responsibility (SCSR)

Environmental

- Students Environmentalist

STRATEGIES & ACTION PLANS

HEBAT Economic Oriented Program and Activities

- Entrepreneurship
- Adaptability & Agility of HEBAT Student
- Social Innovation and Social Entrepreneurship

Strategy 1

Adopt/Adapt MoHE and other ministries current Circular/Policy in establishing USM Policy

Output

- 1 HEBAT Social Oriented Program and Activities Policy established

Outcome

- A virtuous and agile governance

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC/ Division Of Academic & International/ CGSS

Enhancement of HEBAT Flagship Programmes Development

Output

- 12 entrepreneurship training modules (inclusive of Social Innovation and Social Entrepreneurship) established

Outcome

- Successful entrepreneurial USM graduates produced

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC

Institutionalize USM Standard Operation Procedure (SOP) based on latest Circular/Policy

Output

- 3 Entrepreneurship SOP (Student Entrepreneur; Student Incubator; Microcredit) enhanced

Outcome

- Ensure consistency and standardize procedure

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC

STRATEGIES & ACTION PLANS

HEBAT Economic Oriented Program and Activities

- Entrepreneurship
- Adaptability & Agility of HEBAT Student
- Social Innovation and Social Entrepreneurship

Strategy 1

HEBAT Flagship Program Empowerment and Implementation conducted by HDC/ School/ Desasiswa/ Students' Society

Output

- 1 Entrepreneurial Programme per 1 School/ Desasiswa Student Society

Outcome

- Economic oriented HEBAT graduates

Target

- ST, MT, LT

Stakeholders

- HDC/ School/ Desasiswa/ Students' Society

HEBAT Flagship Program Database, System/Application Measurement, Recognition and Reporting

Output

- 1 database, 1 system/application, HEBAT Credentials, awards and Dashboard developed and institutionalized

Outcome

- MALAYSIA – A Sustainability Driven Nation

Target

- ST, MT, LT

Stakeholders

- HDC/ School/ Students' Society

STRATEGIES & ACTION PLANS

HEBAT Social Oriented Program and Activities

- Student Community Social Responsibility (SCSR)

Strategy 2

Adopt/Adapt MoHE and other ministries current Circular/Policy in establishing USM Policy

Output

- 1 HEBAT Social Oriented Program and Activities Policy established

Outcome

- A virtuous and agile governance

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC/ Division Of Academic & International/ CGSS

Enhancement of HEBAT Flagship Programmes Development

Output

- 12 new HEBAT Social Oriented Program established each year

Outcome

- A structured social roadmap program for emotionally intelligent graduates

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC

Institutionalize USM Standard Operation Procedure (SOP) based on latest Circular/Policy

Output

- SOP for Student Community Social Responsibility (SCSR) developed

Outcome

- Ensure best practices of ethical procedures

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC

STRATEGIES & ACTION PLANS

HEBAT Social Oriented Program and Activities

- Student Community Social Responsibility (SCSR)

Strategy 2

HEBAT Flagship Program Empowerment and Implementation conducted by HDC/ School/ Desasiswa/ Students' Society

Output

- 1 SCSR Programme per 1 School/ Desasiswa/ Student Society

Outcome

- Socially oriented HEBAT graduates

Target

- ST, MT, LT

Stakeholders

- Students' Society

HEBAT Flagship Program Database, System/Application Measurement, Recognition and Reporting

Output

- 1 database, 1 system/application, HEBAT Credentials, awards and Dashboard developed and institutionalized

Outcome

- MALAYSIA - A Sustainability Driven Nation

Target

- ST, MT, LT

Stakeholders

- HDC/ School/ Students' Society

STRATEGIES & ACTION PLANS

HEBAT Environmental Oriented Program and Activities

- Students Environmentalist

Strategy 3

Adopt/Adapt MoHE and other ministries current Circular/Policy in establishing USM Policy

Output

- Student's Environmental Responsibility Policy (SERP) established

Outcome

- To ensure the SERP is aligned with the national policy

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC/ Division Of Academic & International/ CGSS

Enhancement of HEBAT Flagship Programmes Development

Output

- 12 new HEBAT SERP Program established

Outcome

- A structured students environmentalist roadmap program

Target

- ST, MT, LT

Stakeholders

- HEBAT Development Centre, HDC

Institutionalize USM Standard Operation Procedure (SOP) based on latest Circular/Policy

Output

- SERP embedded into every programmes

Outcome

- Ensure consistency and standardize procedure

Target

- ST, MT, LT

Stakeholders

- Hebat Development Centre, HDC/ Desasiswa

STRATEGIES & ACTION PLANS

HEBAT Environmental Oriented Program and Activities

- Students Environmentalist

Strategy 3

HEBAT Flagship Program Empowerment and Implementation conducted by HDC/ School/ Desasiswa/ Students' Society

Output

- 1 Environmental Programme per 1 School/ Desasiswa/ Student Society

Outcome

- Environmentally oriented HEBAT graduates

Target

- ST, MT, LT

Stakeholders

- HDC/ School/ Desasiswa/ Students' Society

HEBAT Flagship Program Database, System/Application Measurement, Recognition and Reporting

Output

- 1 database, 1 system/application, HEBAT Credentials, awards and Dashboard developed and institutionalized

Outcome

- MALAYSIA – A Sustainability Driven Nation

Target

- ST, MT, LT

Stakeholders

- HDC/ School/ Students' Society



RESEARCH

Support excellence in transdisciplinary sustainability-related research and research that will enhance and help the sustainability agenda.

Enhance the use of university as sustainable “living laboratory”

To equip the community in USM involving in research activities on the awareness and practices of the sustainability agenda on the researches and publication that being conducted

STRATEGIES & ACTION PLANS

Creating awareness on the importance of incorporating SDGs in research activities (not only research output but all practices) by proactively conducting series of engagement programs: championing in SDGs Research Seminar, Roadshow, Conference

Strategy 1

Output

- Awareness among USM researches that research directions and activities must incorporate inside them SDGs.

Outcome

- Increased in awareness on incorporation on SDGs in research directions and activities

Stakeholders

- RCMO, CIC, BJIM

Target

ST (22)	1 webinar, 1 workshop
MT (25)	1 roadshow. Webinar series
LT (30)	1 seminar/ conference

Strategy 2

Strategizing in achieving excellence in transdisciplinary sustainability-related research programmes and aligning all internal research funding to have in them sustainability agenda.

Output

- Transdisciplinary research programme implemented (for example RUTrans) with specific SDG agenda indicated clearly.

Outcome

- Increased number of transdisciplinary research and internal grant supported projects with direction to achieve SDGs

Stakeholders

- RCMO, CIC, BJIM

Target

ST (22)	20%	Projects/programmes addressing SDGs
MT (25)	50%	
LT (30)	80%	

STRATEGIES & ACTION PLANS

Portraying importance in USM sustainability agenda by understanding and applying SDGs keywords in research output such as research articles/publications.

Strategy 3

Output

- Awareness among USM researches on the SDGs keywords and the importance of them in publications.

Outcome

- Incorporating SDGs keywords in publications.

Stakeholders

- RCMO, CGSS, All Researchers

Target

ST (22)	20%	Publications/ articles
MT (25)	50%	incorporating SDGs
LT (30)	80%	keywords.

Strategy 4

Embracing environmental sustainability strategies by the creation of Sustainability-Laboratories with concepts including reducing carbon emission by minimizing energy usage, and travelling, reducing the environmental impacts from resources consumption via smart inventories etc

Output

- Identification (and certification) of Sustainability-Laboratories in USM with initiative and support given to them.

Outcome

- Creation of Sustainability-Laboratories in USM

Stakeholders

- RCMO, CGSS, All Researchers

Target

ST (22)	20%	Laboratories certified as Sustainability Lab
MT (25)	50%	
LT (30)	80%	

STRATEGIES & ACTION PLANS

Appreciation of existing USM Living-Lab & creation of more USM Living-Lab

Strategy 5

Output

- To maximise the use of living-lab in research (REDAC, CEMACS, ECO-HUB & Archaeo). To create awareness of such labs to community as to portray the seriousness of USM in contributing towards SDGs. To create more USM living-lab.

Outcome

- Increase in awareness on the existence of Living-Lab and the creation of more Living-Lab.

Stakeholders

- USM Living-Lab/ RCMO/ All Researchers

Target

ST (22)	Identified	USM Living-Lab
MT (25)	Creation of > 2	
LT (30)	Creation of > 3	

Strategy 6

Sustainable Development Goals (SDG) Tagging to USM researchers in their USM Expert Curricular Vitae.

Output

- Adding in SDGs tag(s) in the Expert CV for researchers to identify in what area(s) they contribute most towards achieving the SDGs.

Outcome

- Tagging in the Expert CV can create sense of seriousness on moving research towards contributing in SDGs.

Stakeholders

- RCMO/ PPKT/PTJ/All Researchers

Target

- Updating yearly with all researchers will be tagged with their SDGs by 2030



INDUSTRY

To realize sustainable impact through industry engagement and collaboration that benefit all the stakeholders to achieve mutual goals and objectives from the partnership.

Strives to reduce poverty, hunger and inequality, promote decent work and economic growth and build industry, innovation and infrastructure by providing quality education through industry partnerships.

STRATEGIES & ACTION PLANS

Conducting staff attachment in the industry by physically present in the industry for a specific duration.

Strategy 1

Output

- Staff Attachment in the Industry

Stakeholders

- Industry HRs, Related PTJs.

Outcome

- Industry domain believe that this strategy would strengthen the university-industry relationship.
- Staffs that undergo the attachment would get to learn the work culture, progress, needs and industrial development and gain input from industry on the current practice, current technology, expertise needed which are very important for academic development and sustainability, research and consultation in the USM

Target

ST	7 staff	Go for Staff Attachment in the Industry
MT	10 staff	
LT	50 staff	

Strategy 2

Implementing published papers activities that affiliated with the industry.

Output

- Industry Affiliated Publication

Outcome

- Publishing more papers that matching with the contemporary industrial practices

Stakeholders

- Industry HRs, Related PTJs, RCMO, Researchers

Target

ST	50	Industry affiliated publications
MT	150	
LT	300	

STRATEGIES & ACTION PLANS

Establishing a forum for promoting academia-industry linkages that are of mutual benefit to both parties.

Strategy 3

Output

- Industry/Community Advisory Panel (ICAP)

Outcome

- Strengthening smart partnerships between USM and the private sector as well as enhancing USM's competitiveness

Stakeholders

- BJIM, Related PTJs

Target

ST	85	Panels of ICAP
MT	90	
LT	90	

Strategy 4

Creating an engagement platform for the industrial experts with the university staffs and students in classroom

Output

- Industry In Classroom

Outcome

- USM staffs and students to gain direct sharing of ideas from industrial experts in lecture classroom on industry works and culture

Stakeholders

- Related PTJs

Target

ST	30	Industry speakers
MT	30	
LT	60	

STRATEGIES & ACTION PLANS

Implementing university programs that meet industrial practice

Strategy 5

Output

- Industry Endorsed Programs

Outcome

- Strengthening the competitiveness of university programs by getting endorsement from industry for meeting the industrial benchmarks

Stakeholders

- BJIM, Related PTJs, USAINS

Target

ST	300	Student participation
MT	300	
LT	600	



COMMUNITY

Enhancing Impactful Community Engagement Projects / Programme

Championing sustainability-led community engagement and services.

STRATEGIES & ACTION PLANS

Strategy

- To conduct action-oriented community engagement that is current and substantial based on translational research
- Enhancing and empowering Community Engagement by integrating Community Engagement in academic programs

Output

- 3 Existing Programs
- 3 New Programs

Per Year

- 15 Internal Projects
- 5 External Projects
- 5 Programs
- 15 Government Agencies
- 15 Industry Partners
- 100 participants from Community
- 250 participants from University - academic staff/ students

Outcome


- Social Progress Assessment
 - The main purpose of the SPA is to assess the expected impact of the project that has been implemented. SPA is also concerned with interaction, collaboration, and governance that will lead to a form of social transformation.
 - It consists of a broader multi-platform approach that covers various disciplines, social innovation, sustainability and entrepreneurship that will facilitate the involvement of stakeholders, especially the bottom billion.
 - SPA will focus on identifying indicators to assess the social impact of various stakeholders.

Stakeholders

- Government agencies, Industry Player, NGOs, USM

Target 2021 - 2025

- 3 existing programs
- 3 new programs
- 75 internal projects
- 25 external projects
- 25 programs
- 15 government agencies
- 15 industry partners
- 500 participants from community
- 1250 participants from university academic staff/students
- 10% students.



"Environment is no one's property to destroy; it's everyone's responsibility to protect."

Mohith Agadi

SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent



ENVIRONMENT NOISE

Ensure that the noise pollution in USM campuses is managed sustainably and less harmful to the USM community and the stakeholders in long term.

To manage noise pollution related with all USM stakeholders' activities and campus operations in order to create a healthy and sustainable institution via the use of structured strategies and technologies

STRATEGIES & ACTION PLANS

To carry out ambient noise monitoring (indoor and outdoor) at all USM Campuses

Strategy 1

Output

- A comprehensive noise map based on the noise range and colour indicators in the practices of occupational and safety health.

Outcome

- Identification of the target location based on area of study. The point of locations are evenly distributed with the distance 500 m.
- Coordinate each point of the study using Google maps.

Stakeholders

- Related PTJs, UKKP

Target

- A comprehensive noise map will be developed throughout the USM campuses.

Strategy 2

To identify sources of noise and traffic characteristic (point sources and non-point sources) by conducting noise source observation and traffic monitoring

Output

- Comprehensive data analysis and illustration of sources of noise and traffic characteristics in SPSS, Pie Chart and Table.

Outcome

- Identification of the sources contribute to noise.
- Identification of the traffic composition in the campuses

Stakeholders

- Related PTJs, UKKP

Target

- Comprehensive data on sources of noise and traffic characteristics in the USM campuses.

STRATEGIES & ACTION PLANS

To perform personal monitoring routine to person in charge with heavy duty machinery (especially Engineering Campus). In hand together with Department of Occupational Safety and Health and competent person for personal noise monitoring.

Strategy 3

Output

- Identification of stakeholders impacted with occupational noise pollution

Outcome

- Audiometric test

Stakeholders

Division of Industry and Community Network, Related PTJs

Strategy 4

- To suggest noise control measures at identified location in the campuses based on the sources of the noise
- Construction/renovation/installation noise abatement measures

Output

- Noise Control Standard Operation Procedures (SOP)

Outcome

- Sustainable noise control measures

Stakeholders

- Related PTJs

Target

- By using the noise map and noise sources data, the areas that require noise management would be identified accurately.
- A specific sustainable noise control management and abatement measures would be developed according to the source of the noise at the identified areas.



ENVIRONMENT ENERGY

Energy domain aims to reduce energy consumption, Compliance to MS 1525:2007 in all university buildings, Renewable energy generation and University vehicles using hybrid technology energy sources

Reduce energy consumption without compromising productivity, Full compliance to MS 1525:2007, Increase renewable energy generation in university campus and University vehicles being hybrid technology compliant.

STRATEGIES & ACTION PLANS

Target

A. Short-term :

- 2% Reduction in energy consumption
- 50% Compliance to MS 1525:2007
- 1% Increase in solar electricity generation
- 5% Hybrid technology energy compliance

B. Medium term :

- 5% Reduction in energy consumption
- 75% Compliance to MS 1525:2007
- 50% Increase in solar electricity generation
- 20% Hybrid technology energy compliance

C. Long term :

- 10% Reduction in energy consumption
- 100% Compliance to MS 1525:2007
- 100% Increase in solar electricity generation
- 50% Hybrid technology energy compliance

Strategy

- Change energy consumption behaviour of university community
- Install energy efficient equipment and appliances
- Renovate, retrofit or alter buildings to comply to MS 1525:2007.
- Utilise university land and buildings to generate solar electricity
- Periodic vehicle replacement based on hybrid technology compliance.

Output

- Reduction in energy consumption
- Compliance to MS 1525:2007
- Increase in solar electricity generation
- Hybrid technology energy compliance

Outcome

- OBEI less than 136 kWh/ m2/ year
- Non fossil fuel energy sources

Stakeholders

BJIM, Related PTJs



ENVIRONMENT MOBILITY

- Promote sustainable transport
- Establish implementation framework for promoting sustainable transport in the main campus.

- Promote healthy living environment by encouraging sustainable mobility
- Provide supporting environment for sustainable mobility
- Promote safer roads on campus including freedom of space for cyclists & pedestrian.

STRATEGIES & ACTION PLANS

The mobility sector has a plan in place to Sustainable mobility awareness program for students during orientation weeks (all campuses).

Strategy 1.1

Output

- Introduction to the importance of sustainable mobility to health and lifestyle.
- Experiencing shortest walking path in the campus.
- Experiencing cycling in the campus.
- Road safety awareness as pedestrian and cyclists in/outside campus.

Outcome

- Starting with the cohort of students (2021/202) having awareness about sustainable mobility in the campus. In five years, 5 cohort of students already adapted with sustainable mobility.

Stakeholders

CGSS, BikeCommute@USM, Dr. Bike, Urbanice, Registrar Office, Schools, Hostels, IPS, IMCC etc

Strategy 1.2

- Walking and cycling campaigns and awareness (as medium for healthy lifestyle and combat stress) to staffs and students.
- Walking and cycling competition and rewards.

Output

- Emphasizing the USMFIT platform and apps. Give rewards based on 'what they need' e.g CPD points, LPP marks, free medical check up, vouchers from Farmasi Pusat Sejahtera, vouchers for notebook, computer, claim for Article Processing Charge.
- Competition between PTJ/ hostels/ clubs/ through walking and cycling challenge, healthy lifestyle challenge, reduce carbon footprint challenge etc
- Rewards including CPD points, LPP marks, special Anugerah for individual and groups etc

Outcome

A. Short-term :

- 30% of university population involved with the activities by 2022

B. Medium term :

50% of university population involved with the activities by 2023

C. Long term :

- 80-90% of university population involved with the activities by 2023

Stakeholders

CGSS, USM Fit, BikeCommute@USM, Pusat Sejahtera

STRATEGIES & ACTION PLANS

Car and motorcycle free day

Strategy 1.3

Output

- Introduce car & motorcycle free day or free hour every month (during working hours). Need to do survey to understand the perception, to address the challenges and obstacles, to measure readiness of the population.

Outcome

A. ST :

- 30% reduction of MV usage during the program

B. MT :

- 50% reduction of MV usage during the program

C. LT :

- 100% reduction of MV usage during the program and 30% reduction of registered motor vehicles

Stakeholders

Pejabat Keselamatan, CGSS, BikeCommute@USM

Strategy 1.4

Active mobility day

Output

- Introduce bike and pedestrian day as replacement for motor vehicles by providing bike rental program & refurbished abandoned bikes at Eng Campus.

Outcome

A. ST :

- 30% increase of rental and refurbished bicycles and 30% increase of university walking during office hours

B. MT :

- 50% increase of rental and refurbished bicycles and 50% increase of university walking during office hours

- C. LT : 70% increase of rental and refurbished bicycles and 90% increase of university walking during office hours 80-90% of university population involved with the activities by 2023

Stakeholders

Pejabat Keselamatan, CGSS, BikeCommute@USM Dr. Bike, Urbanice

STRATEGIES & ACTION PLANS

Work from home

Strategy 2.1

Output

- Practical WFH timetable for staff and student, Survey to address the challenges, opportunities etc

Outcome

A. ST :

- Analysis of reduction in carbon emission (by reducing number of private vehicle entering USM, and scheduled entrance to USM). Analysis of reduction in carbon emission (by limiting number of bypass vehicles)

B. MT :

- 30% staff maintain with WFH

Stakeholders

CGSS, PTJs

Strategy 2.2

Infrastructure & facilities for active mode

Output

- Identify adequate facilities for active mode
- Audit for pedestrian pathway, potential cycling lane
- Improve and provide adequate facilities for active mode

Outcome

A. ST :

- Existing pathway and potential cycling path

B. MT :

- 30% shaded pathway (including tree orientation). 30% of bicycle signs installed miles painted of bike lanes no. of self-service bike tool

- C. LT : 50-70% shaded pathway (including tree orientation). 30-70% of bicycle signs installed miles painted of bike lanes. No. of self-service bike tool

Stakeholders

JPPA, BikeCommute@USM

STRATEGIES & ACTION PLANS

Collaboration with private sector/ external parties

Strategy 2.3

Output

- MOU

Outcome

A. ST:

- 1 collaborator

B. MT:

- 2 collaborators

C. LT:

- 3 collaborators

Stakeholders

All PTJ

Strategy 2.4

Preparation for EV and AV (busses, buggies, bike.

Output

- Framework for EV and AV vehicles, research and collaboration with industries

Outcome

A. Short-term :

- 10% awareness for EV and AV as alternative mode

B. Medium term :

- 30% awareness for EV and AV as alternative mode

C. Long term :

- 70% awareness for EV and AV as alternative mode

Stakeholders

JPPA, HDC, PTJs

STRATEGIES & ACTION PLANS

Restrict unnecessary private motor vehicle usages and traffic violation through enforcement and awareness campaign

Strategy 3.1

Output

- Enforce Peraturan Lalu Lintas dan Parkir 2015.
- Increase compound rate for traffic violation including speeding, illegal parking etc

Outcome

A. ST:

- 30% awareness towards traffic and safety regulation in the campus

B. MT:

- 50 - 70% awareness towards traffic and safety regulation in the campus

C. LT:

- 100% awareness towards traffic and safety regulation in the campus

Stakeholders

JK,CGSS

Strategy 3.2

Improve traffic circulation system to encourage walking and cycling

Output

- Identification of pedestrian and walking zone through simulation, modelling and GIS mapping
- Identify adequate traffic circulation to support car and motorcycle free day.

Outcome

A. ST:

- Implementation of pedestrian and walking zone in the campus, 10% - 30% increase of walking and cycling activities at the zones

B. MT:

- Implementation of pedestrian and walking zone in the campus, 30%- 50% increase of walking and cycling activities at the zones

C. LT:

- Implementation of pedestrian and walking zone in the campus, 50%- 70% increase of walking and cycling activities at the zones

Stakeholders

JK,CGSS



ENVIRONMENT

FLORA AND FAUNA

- To sustain and enhance biodiversity (flora & fauna) of USM
- Stop introduction of alien/invasive species
- Promotion for biodiversity through educational outreach

- Enhance the biodiversity and the management of biodiversity in USM
- Reduce and minimize the introduction and potential spread of invasive species
- Create awareness about biodiversity of flora & fauna in USM campus among USM communities SDG4 Education.

STRATEGIES & ACTION PLANS

Flora and fauna campus wide survey via field survey

Strategy 1.1

Output Database of flora and fauna

Outcome Documentation of flora and fauna in USM

Target 2025

Stakeholders CGSS, SBS

Strategy 1.2

Flora and fauna via drone monitoring system

Output Flora and fauna health mapping

Outcome An integrated monitoring system for the environmental health in USM

Target 2023

Stakeholders CGSS, SBS

STRATEGIES & ACTION PLANS

Tree planting program (local species)

Strategy 1.3

Output

Increase ex-situ biodiversity, improve carbon stock

Outcome

Natural habitat continuity

Target

ST, MT, LT

Stakeholders

CGSS, Development office, SBS

Strategy 1.4

Carbon stock calculation for trees in USM

Output

- Properly quantify the current carbon stock
- Reduce carbon sequestration

Outcome

Help to decide a proper strategy for tree management/cutting

Target

2023

Stakeholders

CGSS, SBS

STRATEGIES & ACTION PLANS

Evaluation and suggestion tree management strategies

Strategy 1.5

Output Better management of tree (health/risk)

Outcome Reducing risk to human and properties in USM

Target 2025

Stakeholders JPPA, SBS, Jawatankuasa Kawalan Pokok USM

Strategy 1.6

Reactivate Jawatankuasa Kawalan Pokok USM and probably include the animal management (Rebrand)

Output To have a proper channel for the management and decision regarding trees in the campus

Outcome A comprehensive and more effective management of flora and fauna in the campus

Target 2023

Stakeholders CGSS, JPPA, SBS

STRATEGIES & ACTION PLANS

Identification of invasive species in USM

Strategy 2.1

Output Database of invasive species

Outcome Documentation of a list for suitable ornamental or landscape plants

Target ST

Stakeholders CGSS, SBS

Strategy 2.2

Protect native plant by preventing the spread of alien/invasive species

Output To reduce competition to local species

Outcome To lessen the impact of invasive species through development of policy on alien species.

Target MT

Stakeholders JPPA, SBS, MKU

STRATEGIES & ACTION PLANS

Pest management strategies for USM

Strategy 2.3

Output

A proper strategy to control and manage pest (animals and plants) in USM

Outcome

Pest management plan for USM

Target

MT, LT

Stakeholders

SBS, JK, UKKP

Strategy 3.1

Update tree tagging and mapping

Output

A map of actual location of trees can be shared on USM website/ social media

Outcome

- o increase visibility of USM green initiatives.
- Better strategy in managing/future development to avoid the cutting of biodiversity/heritage trees

Target

ST, MT

Stakeholders

SBS, CGSS

STRATEGIES & ACTION PLANS

Mapping for animal roosting site

Strategy 3.2

Output

A map of actual location of animal sites can be shared on USM website/ social media

Outcome

To increase visibility of USM green initiatives.

Target

ST, MT

Stakeholders

SBS, CGSS

Strategy 3.3

Using AI to create localise database for plant/ roosting/ feeding in USM

Output

An Apps for plant/ roosting/ feeding identification

Outcome


Better strategy in managing/future development to avoid the cutting of biodiversity/ heritage trees

Target

MT, LT

Stakeholders

SBS, CGSS



"We never know the worth of water till the well is dry."

Thomas Fuller

SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent

ENVIRONMENT AIR

To be better prepared for air pollution episodes

- Increase awareness on air quality.
- Develop air quality module in the dashboard and alert system
- Establish SOPs
- Build an air quality station network

STRATEGIES & ACTION PLANS

Strategy

Activity

There are 8 activities that have been planned to reduce air pollution from internal and external factors in the Five-Year Sustainability Implementation Plan to Achieve SDG3 and SDG11

- Collaborate with DoE for data to increase scope MoA
- Develop air quality module within the sustainability dashboard
- Awareness campaign : organize survey and campaigns
- Set up an early warning system
- INSTITUTION DOMAIN : Create and review air pollution crisis SOPs – outdoor and indoor
- MOBILITY DOMAIN : Control vehicle numbers in campus through a traffic control system
- Establish air quality monitoring stations network – outdoor and indoor
- INSTITUTION DOMAIN : Network scheduled maintenance and execution

- To overcome the problem of air pollution, there are 2 types of strategies used, namely internal impact and external impact strategies. this is because air pollution occurs from different factors and different effects.
- The strategy used for internal effects (transportation) is Control vehicle numbers while, the strategy used for external effects is Develop air quality dashboard - early warning system, Create air pollution episode SOPs, and Establish monitoring stations.

Stakeholders

JPPA, KS, CGSS, PPKT, Unit Keselamatan, UKKP, JK

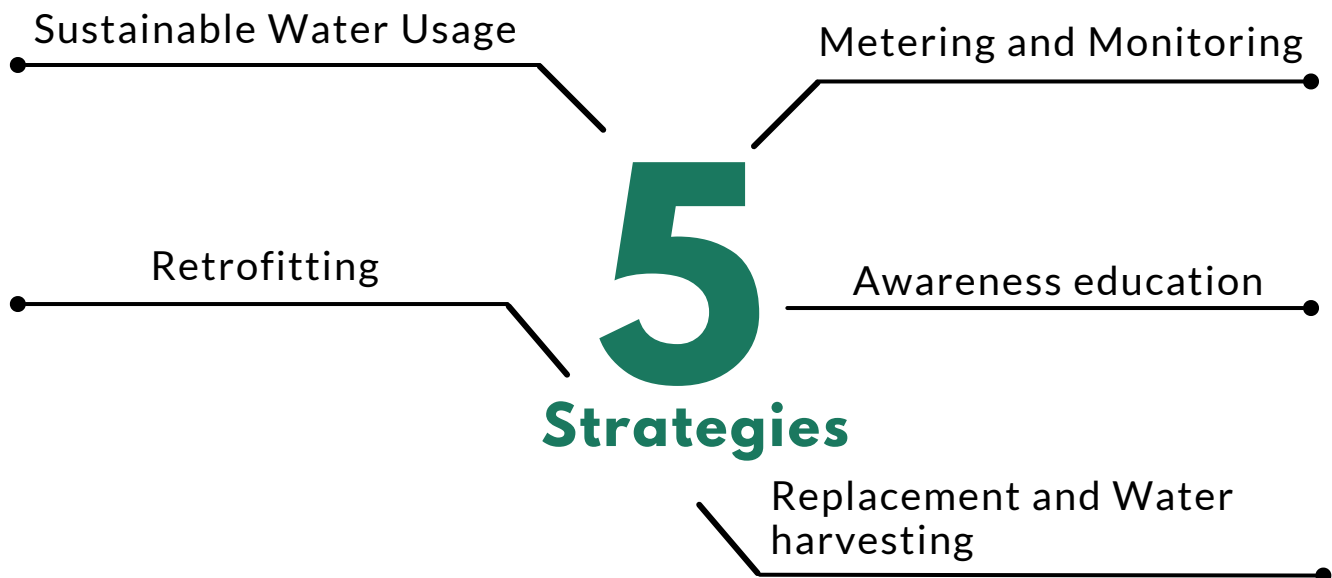


ENVIRONMENT WATER

Integrated Water Management

Encourage sustainable water management

STRATEGIES & ACTION PLANS



OUTPUT & OUTCOME

Output

- Reduce 30% of water bill
- Reduce 20% of wastage water
- 50% students and staffs aware of saving water
- Reduce 30% of water bill
- Reduce 70% missing water in the campuses

Outcome

- Water saving
- Reduction in water bill
- Sustainable water usage
- Reduction in water bill

Stakeholders

- JPPA, CGSS, DVC (SID)
- External Consultant



WASTE

To be better prepared for air pollution episodes

- Precise and sustainable waste management operation to generate income.
- Waste to wealth
- Sustainable waste management towards low carbon campus.

Target 1

Waste management

- 20-30% of waste generation go to concept zero waste
- 30-40% of waste generation go to concept zero waste
- 40-50% of waste generation go to concept zero waste
- Continue and maintain the process.
- 50-60% of waste generation go to concept zero waste.
- Increase the production.
- 80% of waste generation go to zero waste
- 100% zero waste in the all USM campuses

Organic Waste

Target 1.1

1. Understand waste generation in USM
2. Identify storage, specific animal feed
3. Develop animal cages
4. Develop SOP
5. Run the system of compost and animal feed
6. Apply compost to plant in USM
7. Breeding and feed animal
8. Offer volunteer/part time job to student
9. Sell organic meat to internal cafeteria
10. Generate income
11. Control price of meal in the USM cafeteria
12. Implement to other campuses
13. Audit of income generation verses investment
14. Increase the production
15. Expand to other campuses
16. Empowerment the system

Target 1.2

Garden waste

- 1.-Understand waste generation
- 2.-Identify location for storage
- 3.-Identify equipment for carbonize
- 4.-Develop schedule time for carbonize
- 5.-Develop SOP
- 6.Run the system
- 7.Collect the charcoal
- 8.Understand the capacity of charcoal versus size of room
- 9.Implement application to other type of room
- 10.Expand application
- 11.Increase production
- 12.Empowerment the system

Disposed furniture

Target 1.3

- 1.Understand waste generation
- 2.Identify type of furniture
- 3.Identify local authority and discussion.
- 4.Develop SOP
- 5.Identify location and size of storage
- 6.Segregation process will started
- 7.Identify the right vendor for recycling
- 8.Offer part time job
- 9.Expand to other campuses
- 10.Audit generate income with segregation versus without segregation
- 11.Empowerment the system

Target 1.4

Electronic waste

1. Understand waste generation
2. Understand segregation process
3. Develop SOP
4. Identify location and size of storage
5. Process of segregation will started
6. Identify the right vendor for electronic board recycling.
7. Explore about the system of metal recovery from electronic board

Oil

Target 1.5

1. Identify type of other waste- used oil, bottle and etc.
2. Understand waste generation
3. Identify location and size of storage
4. Collection and segregation will start.
5. Identify right vendor
6. Explore about biodiesel



SUSTAINABILITY ACTION PLAN

USM as a sustainability change agent

