



Mahidol University  
sustainability

# MAHIDOL UNIVERSITY SUSTAINABILITY REPORT 2024



LIVE AND  
LEARN  
WITH MU SUSTAINABILITY

# 5Ps of Sustainable Development



## PEOPLE

The SDGs declare the world's determination "to end poverty and hunger, in all their forms and dimensions, and to ensure that all human beings can fulfil their potential in dignity and equality and in a healthy environment." Despite some signs of hope, it's clear we need to do better – especially as we face complex challenges like conflict and climate change that directly impact the dignity and well-being of humankind.



## PROSPERITY

The SDGs aim to "ensure that all human beings can enjoy prosperous and fulfilling lives and that economic, social, and technological progress occurs in harmony with nature." Inequality is one of the defining issues of this generation and requires a commensurate focus that, to date, has been lacking.



## PLANET

The SDGs set a goal to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, "so it can support the needs of the present and future generations." Nearly every day we are seeing just how connected – and fundamental – climate change is to global development.



## PEACE

The SDGs rightly note that "There can be no sustainable development without peace and no peace without sustainable development." Therefore, they set out goals to foster peaceful, just, and inclusive societies which are free from fear and violence.



## PARTNERSHIP

The SDGs call for "a spirit of strengthened global solidarity, focused in particular on the needs of the poorest and most vulnerable and with the participation of all countries, all stakeholders and all people." Problems that cross geographies and sectors require collaboration that does as well.

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SDG

# HIGHLIGHTS



## Population

**38,642** staff  
**29,684** students  
**1,553** international students  
**103** disability students and staff



## Education & Research

**3,885** research output  
**2,363** research publications related to SDGs  
**382** research units  
**2,256** million baht of research fund



## Scholarship

**9,907**  
students are supported  
more than  
**116** million baht



## Environment

**5.27** million m<sup>3</sup> water consumption  
**100%** recyclable treated wastewater (in Salaya campus)  
**344,953** MWh electricity consumption  
**5,243** MWh solar energy consumption  
**9.24%** recyclable waste  
Reduce GHGs emission **100%** by 2030



## Governance

**84.37** score of Thailand's Integrity  
and Transparency Assessment



## Collaboration

**524** MoU/MoA collaboration



## Health Service

Total **8.4** million  
all patient services

# INTRODUCTION

## Approach to Sustainability

Mahidol University strives to be “a leader on sustainability” in responding to the United Nations 2030 Agenda for Sustainable Development. We have been developing our academic activities, research, and people for sustainable community through our passion of “Mahidol for Sustainable Future”. Beyond creating knowledgeable society, Mahidol University further concerns for sustainable development by contributing economic, social and environmental dimensions leading to efficient use of resources, social equity and improved quality of life of faculty, staff, students and the surrounding communities. Therefore, Mahidol University Sustainability Strategy which consists of 4 key areas as the framework was established.

- 1) Research and Innovation for sustainability
- 2) Education for sustainability
- 3) Community and Social engagement for sustainability
- 4) Operations for sustainability

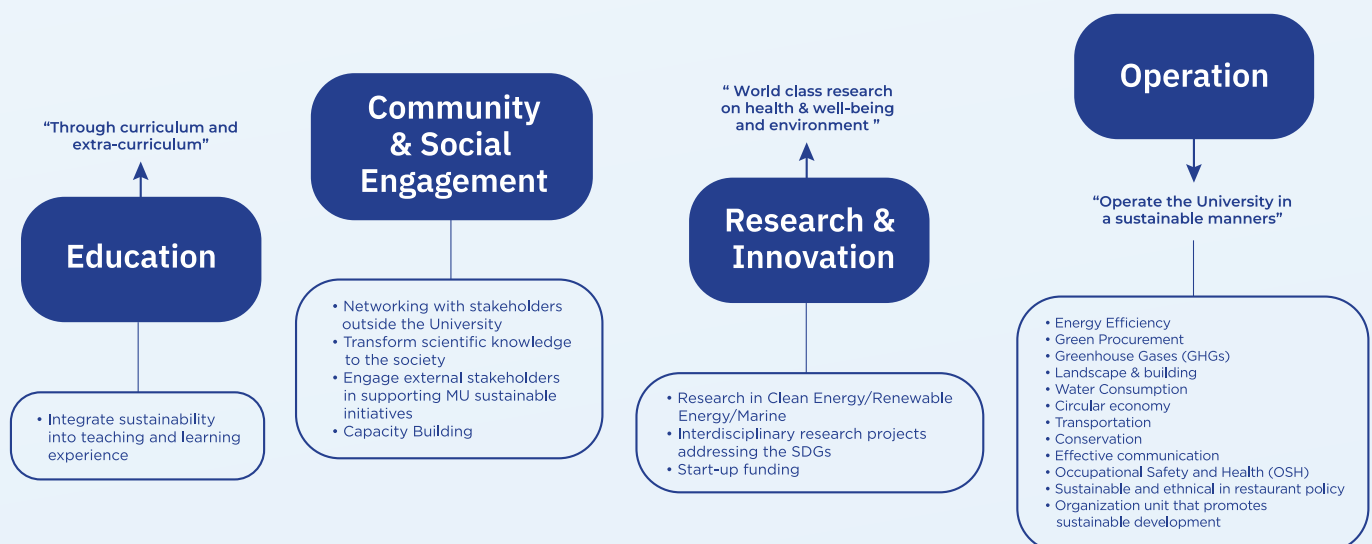
In this report, our active sustainability performance was demonstrated against a broad spectrum of aspects, according to the Mahidol University Sustainability Strategy.

## Mahidol University Sustainability Strategy

Mahidol University as a leading institution of higher education in Thailand that produces quality graduates in various of fields for society in order to create and develop Thailand to progress on par with those of other countries with the key aspiration of being “Wisdom of the Land”. Therefore, Mahidol University Sustainability Strategy was created under the concept of Sufficiency Economy Philosophy according to the 17 Sustainable Development Goals (17 SDGs) by the United Nations, with 4 objectives;

- 1) MU will educate and shape our staff and students with sustainability mindsets to transform into change agents for sustainable society.
- 2) MU will address local and global challenges, tackle complex sustainability issues and promote sustainability actions in all research activities.
- 3) MU will embed continuous improvement of a sustainability operations.
- 4) MU will embrace a culture of well-being and sustainability throughout the campuses and promote inclusive society.

By building a strong, stable and sustainable foundation through the Mahidol University Sustainability Strategy, the University is ready to drive change in all sectors of the University through 4 key areas as described in the figure.



# 1 NO POVERTY



**149**  
Researchers



**52**  
Research  
units



**187**  
Research  
output

# SDG 1

## No Poverty

### Financial Support

The University has a policy to provide scholarships to encourage and support students at all levels, including those who lack financial resources, so that they can receive financial assistance and have equal access to quality educational resources until graduation. Moreover, the University also provides assistance by offering students opportunities for extra income through part-time work at the University, with compensation given as a scholarship to ease the financial burden on their families. This helps students access a standardized education system throughout their course of study and ensures that they have equal rights to educational resources, in line with the Sustainable Development Goals SDG 1: No Poverty and SDG 4: Quality Education.

Scholarships	Number of Students	Scholarship Fund (Baht)
Scholarships Supporting Student's Education*	7,191	43,210,380
Faculty Scholarships	2,474	72,463,840
Support Grants	15	191,400
Welfare Grants	227	573,430
<b>Total</b>	<b>9,907</b>	<b>116,439,050</b>

Note: \* The Mahidol Medical Scholars Program and the King's Scholarships are categorized as Scholarships Supporting Student's Education, and the honorary award for outstanding graduates is categorized as Faculty Scholarships.

Furthermore, to provide students who lack financial resources with greater educational opportunities, the University facilitates applications for student loans through the Student Loan Fund. Last year, 2,969 students received loans from the fund, totaling more than 217 million baht in educational support. This initiative serves as a crucial channel that enables students with potential to access educational resources, contributing to human capital development and creating a sustainable future for Thai youth.

### Extra Income Opportunity for Students

Mahidol University is committed to supporting and nurturing students so they can achieve a good quality of life. Therefore, the University has allocated a budget from its revenue to create extra income opportunities for students during semester breaks or outside of their study hours. The main objective of this project is to provide students with the opportunity to make the most of their free time by gaining real work experience, which will help enhance their skills and readiness for employment after graduation. Additionally, these part-time jobs provide a source of additional income that will help reduce the burden of educational expenses for students and their parents. Mahidol University acknowledges the significance of equipping students with the necessary skills to succeed the real working world and is committed to supporting them through this measure, with a budget allocation of 600,000 baht to create extra income opportunities for students.

Item	Budget Disbursed (THB)	Number of Students Working Part-Time for the University
2023 Budget Allocation of 600,000 Baht	557,430	226
- Quarter 1	34,500	35
- Quarter 2	39,690	23
- Quarter 3	62,590	42
- Quarter 4	420,650	126

### University to Sub-district Project (U2T for BCG and Regional Development)

Mahidol University has applied academic knowledge to enhance the value of community products. This project is being piloted by the Amnat Charoen Campus and the Nakhon Sawan Campus. The Amnat Charoen Campus aims to revive the bio economy and develop local products, producing at least 2 products per sub-district, covering 43 out of 56 sub-districts in Amnat Charoen Province. The campus has improved community products made from sedge by creating high-quality and appealing sedge mats. Additionally, it utilizes technology to render them fungus-free, thereby extending their service life. Furthermore, the campus extracts beneficial proteins from silk cocoons, which are subsequently incorporated into silk protein soap products.



The Nakhon Sawan Campus has supported the capacity development of 9 sub-districts in Nakhon Sawan Province to enhance community capabilities according to the specific contexts of each area. For example, communities involved in agriculture and animal husbandry generate significant amounts of waste. To address this, a garbage bank project has been developed to purchase waste from members and outsiders, which also serves as a community learning center. Additionally, the campus utilizes animal waste to produce organic Bokashi fertilizer. For communities engaged in sugarcane farming, the campus has improved the processing of freshly squeezed sugarcane juice and sugarcane wine, thereby adding value to these products. Moreover, since many rural communities are involved in various types of agriculture, the University provides support to reduce production costs and increase product value, which includes liquid and granular fertilizers, herbal honey, and soil nutrient analysis services.



## 2 ZERO HUNGER



**365**  
Researchers



**95**  
Research  
units



**520**  
Research  
output

# SDG 2 ZERO HUNGER

## SMART Farmer

The Bachelor of Science Program in SMART Farmer at Nakhon Sawan Campus was established based on the concept of “Production-Profitability-Safety-Sustainability,” inspired by the success of the Teak Chicken project. This project involved raising chickens freely with herbs and pandan leaves, resulting in Happy Chicken Eggs known for their quality and safety. Currently, the project has expanded to include Happy Duck Eggs, which are also guaranteed to be of high quality and sanitary. The SMART Farmer program continues to produce quality graduates. Students and lecturers in the program have developed products under the “Production-Profitability-Safety-Sustainability” concept by processing local raw materials to increase their value. For example, they have created Lotus Root Wine from Bueng Boraphet, a lake rich in lotus plants due to its location and long-standing cooperation with the Bueng Boraphet network. While lotus roots are used in various dishes, their short shelf life can lead to spoilage. Therefore, the University has processed them into Lotus Root Wine products. Another product is KOEI CHAI Palm Sugar Wine, developed from the abundant palm trees in Koei Chai Sub-district, Nakhon Sawan Province. The palm trees are processed into KOEI CHAI Palm Sugar Wine, which creates economic value and promotes careers or businesses for students and community members. Past accomplishments of the SMART Farmer program serve as confirmation that its graduates possess the necessary skills to transition into the workforce and achieve financial independence. This course also emphasizes the concept of sustainability.



## PTFI Centre of Excellence, Asia

The Institute of Nutrition has been in operation for over 47 years. It conducts research at both the laboratory and community levels and provides education to produce quality graduates for society. This includes offering training both domestically and internationally, along with technical consulting and analysis services on food and nutrition. Due to its cooperation, commitment, and past operational capabilities, the Institute of Nutrition has been appointed as the Periodic Table of Food Initiative (PTFI) Centre of Excellence in Asia. Supported by the Rockefeller Foundation, the PTFI Center aims to establish a food composition analysis network and create a public database of the biochemical composition and functions of various active ingredients in foods worldwide. The primary mission of this collaboration is to enhance global food security by studying the biodiversity of food resources. The initial goal is to analyze approximately 1,600 food samples, with a particular focus on plants used as food, which may vary in practice across different cultures. This research aims to provide valuable information to consumers, as there is a scarcity of studies on variations in nutritional value and health benefits.



## Healthy Food Innovation

### Soybean Tofu Mixed with Inca Peanut Cake

Inca peanuts (Sacha inchi) are a rich source of oil and protein. The nut-like seeds are processed to extract oil, which is rich in unsaturated fatty acids, particularly omega-3 ( $\alpha$ -linolenic acid; ALA) and omega-6 (linoleic acid; LA). The leftover peanut cake from the extraction is typically discarded or used as animal feed. However, the Faculty of Public Health recognizes the value and benefits of this waste cake, which still contains high protein, and has transformed it into a soybean tofu product mixed with Inca peanut cake, catering to vegetarian consumers and those seeking protein alternatives to milk and meat.



### HI RIZE

The Faculty of Public Health has developed Riceberry Jelly, a thick food that holds its shape on a spoon, in accordance with The National Dysphagia Diet standards to provide high protein and energy. This food utilizes protein from soybeans, fat from a coconut cream alternative, and riceberry, which is high in antioxidants. These ingredients contribute to the maintenance of nutritional status and the enhancement of nutritional value for individuals with dysphagia or swallowing problems, which are common among the elderly due to physical degeneration and various diseases. Additionally, it is considered a vegetarian jelly due to its soybean origin.



### Mahidol University Cafeteria (MU Cafeteria)

Mahidol University, Salaya Campus, holds a central food court located in the Mahidol Learning Center (MLC) building, provided to serve the needs of students, staff, and the public. The food court offers a variety of options, including savory and sweet foods, vegetarian foods, and Muslim-friendly foods. All shops within the food court are carefully selected. Shop operators are required to undergo training and pass strict inspections according to the standards of the Department of Health, Ministry of Public Health. Food handlers must have annual health checkups, and each restaurant's food samples are randomly tested for contaminants according to the Ministry of Public Health's Safe Food Program criteria. Additionally, all shop operators are provided with annual food sanitation training and hygiene education to ensure compliance with food safety standards, including those for food preparation, premises, and cooking. There is also an inspection by a committee to ensure that shops adhere to service standards, such as opening and closing according to specified times, prioritizing environmental factors, maintaining cleanliness, and selling food at designated prices. Therefore, one can be assured that the food distributed at this cafeteria is safe, hygienic, and healthy.



### 3 GOOD HEALTH AND WELL-BEING



**2,640**  
Researchers



**200**  
Research  
units



**16,206**  
Research  
output

# SDG 3

## GOOD HEALTH AND WELL - BEING

### Smoking Free Policy

Mahidol University has been implementing the Smoke-Free University policy since 2009 to align with national policies and protect the health of non-smokers. This policy involves restricting smoking areas, enforcing measures in case of violations, supporting rehabilitation for those who wish to quit smoking, integrating these practices into learning materials and curricula, providing both offline and online education, developing research and innovations, and rejecting any support from entities involved in the tobacco business.



### Low Sodium Policy

Mahidol University is implementing the Healthy University: Low Sodium Policy to become a model institution in reducing sodium consumption. This policy aims to raise awareness about the negative health effects of excessive sodium intake beyond the body's daily needs, which can lead to non-communicable diseases (NCDs). It also provides information on the dangers of salt consumption, recommends salt reduction consumption, advocates for a salt tax, and organizes campaigns to promote sodium reduction. Moreover, the University supports innovations in low-sodium foods, such as Pak Sathon fish sauce (from the Faculty of Public Health), which has a 25% reduction in sodium content. This year, the Mahidol University for Social Engagement Forum 2023 is being held under the theme LOW (SO) DIUM FESTIVAL, inviting Thai people to contribute to a healthier society by reducing sodium consumption. Furthermore, funding has been provided through the Low Sodium Campaign Funding to support 13 faculties within Mahidol University across 11 projects.



## Health Service

In addition to offering general health services through the 9 main hospitals under its umbrella, the University also considers the needs of those who are unable to access healthcare. Therefore, proactive health services in both physical and mental care are provided free of charge. These services include activities that promote community health, elderly care, chronic, non-communicable disease prevention, and dental services, among others.

Regular Service	Number of services
Physical Healthcare Service	7,591,318
Dental Service	763,398
Free Dental Service	9,389
<b>Total</b>	<b>8,364,105</b>

Student Service	Number of services
Physical Healthcare Service	36,044
Mental Health Service	3,214
Dental Service	684
<b>Total</b>	<b>39,942</b>

## Mental Health Promotion

### MU FRIENDS

The University prioritizes students' mental health, recognizing that rapid changes in the social environment, economy, technology, and physical illness can cause stress, pressure, and emotional changes. To address these issues, the Mahidol University Mental Health Counseling and Care Center (MU Friends) was established, where psychologists and counselors provide regular services. The processes include screening students' health, monitoring and reporting results, offering advice, and promoting mental health.

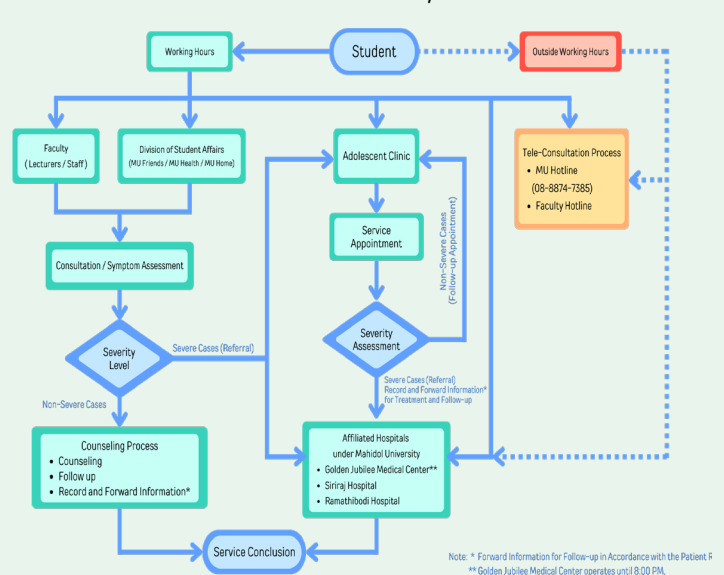


Facebook page: Mahidol Friends or the 24/7 MU Hotline at 088-8747385

### MU My Mind

The Department of Mental Health and Psychiatric Nursing at the Faculty of Nursing has developed the MU MyMind Mobile Application to promote mental health and prevent mental health issues in children and adolescents. This initiative was driven by the increasing depression among children as young as primary school. The process of development involved children, youth, and stakeholders from the beginning to ensure the application was tailored to each target group's needs. Following its effective results, the University collaborated with the Department of Engineering at Kasetsart University to expand the application's use to secondary schools, aiming to establish model schools for promoting mental health and preventing mental illness. The initiative was then extended to other educational institutions. Subsequently, policy proposals were developed to drive innovation and policies at both the institutional and national levels, in alignment with the National Mental Health Development Plan (Mental Health in Thailand 4.0) 2018–2037, to promote mental health and prevent mental illness in adolescents.

### Mental Health Care System



- A screening system of international standard quality that can identify issues from the initial stage and notify those with severe conditions
- A mental health promotion and problem prevention system
- A care system for individuals at risk/ with mental health problems
- A referral system for mental health and psychiatric services with continuous rehabilitation
- An easy-access system with no restrictions on time, location, or the number of services used

## Capacity of Public Health System

### Medicine for *Mycobacterium Tuberculosis* Lineage 1.2

The L1.2 strain of tuberculosis is commonly found in Southeast Asian countries. It was discovered in Thailand and reported by Professor Dr. Prasit Palitponkanpim and his research team in 1997. Genomic research on tuberculosis in Thailand over the past 20 years has played a critical role in discovering that a mutation at base 189 of the *whiB7* gene causes tuberculosis to change from being drug-resistant to sensitive to the antibiotic clarithromycin. Additionally, the strains of TB bacteria are linked to factors such as migration, ethnicity, and language, which are key data for further research and policy development to prevent the spread of the disease. Later, researchers from Rockefeller University further studied the details of this mutation and found that it was specific to the L1.2 strain, often found in patients from countries around the South China Sea and the Pacific Ocean. This research led to the discovery that the antibiotic clarithromycin can inhibit L1.2 strains of tuberculosis. In this regard, Professor Dr. Prasit Palitponkanpim and Professor Emeritus Dr. Pornchai Matangkasombat jointly founded the Center for Microbial Genomics (CENMIG) in 2020 under the vision of "Genomics for the betterment of mankind" (Department of Microbiology, Faculty of Science, Mahidol University). The center's key mission is to continue



### Lung infected with tuberculosis (TB)

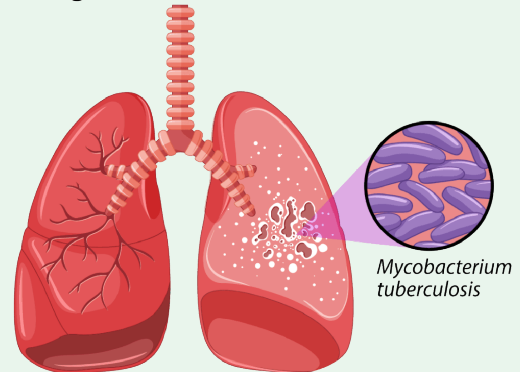


Photo: Advocate Health Care

studying the genetic factors of important pathogens, such as tuberculosis, to prevent drug resistance, control drug-resistant infections, improve public health, and develop Thailand's and ASEAN countries' bioinformatics capabilities. These efforts are vital to ending the pandemic by 2030, in alignment with the United Nations' Sustainable Development Goals (SDGs).



Photo: Freepik Company S.L. All rights reserved

### Development of Antibody Drugs to Treat Dengue Fever

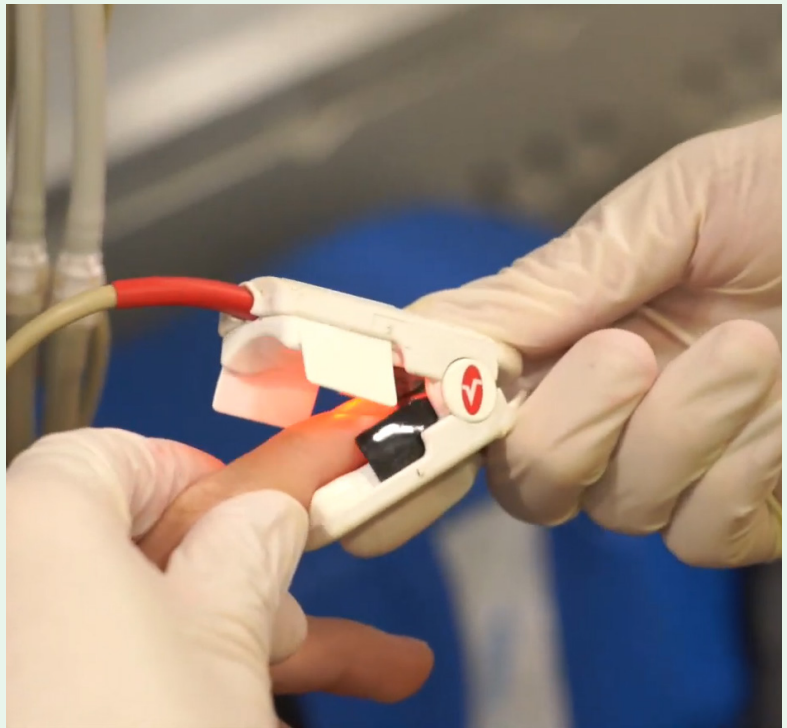
Thailand faces annual dengue fever outbreaks, with cases ranging from asymptomatic to severe and even fatal if not promptly treated. Despite being a long-standing and widespread disease, no specific treatment exists. The Center of Excellence in Antibody Research at the Department of Social and Environmental Medicine, Faculty of Tropical Medicine, has developed an antibody that binds protein of the dengue virus to the surface, preventing it from entering human cells. This approach is intended for patients who experience high fever during the first 7 days of infection. The research has been tested on mice and monkeys, and a contract has been signed with a foreign pharmaceutical company to invest in the commercial development of the treatment. The company has since procured a dosage to be tested in human volunteers, with trials set to begin next year.

However, the most severe dengue symptoms—such as low platelet count, blood vessel leakage, and viral multiplication—typically occur after the first 7 days of infection. Building on previous developments, the research team at the Center of Excellence has created a more effective antibody that not only inhibits the virus during the first 7 days of infection but also reduces the severity of symptoms in the subsequent 7 days after infection. This innovation has been patented, published in the global academic journal, *Biomedicines* 2023, and selected for commercial development under the Lab to Market project by Yothee Medical Innovation District (YMID). A spin-off company has been established to further develop this innovation commercially, with the goal of improving quality of life and promoting public health.

## Health Outreach Programs

### Training on Prehospital Care for Trauma Patients

Accidents can occur anytime and anywhere, affecting ourselves, those around us, or even strangers we encounter in society. Individuals involved in accidents often require immediate assistance to manage their symptoms or reduce the severity of their injuries before receiving medical treatment or being transferred to a hospital. However, providing aid to an injured person requires proper first aid skills. Without them, the patient may suffer further harm. This is why basic knowledge of first aid or care for injured individuals outside the hospital is something the general public should learn in case of emergencies. Therefore, the Department of Emergency Medicine, Faculty of Medicine Ramathibodi Hospital, has extended its bachelor's program in Emergency Medicine to include the public sector. This free online course offers training in basic skills for prehospital care, and participants receive a certificate upon completing the course. While the training does not provide the credentials to become a licensed professional through the National Institute for Emergency Medicine, unlike emergency medical volunteers, it equips participants with the confidence to assist during emergencies. Furthermore, delivering appropriate emergency care can save the lives of those awaiting the medical team. This reflects the university's commitment to spreading knowledge, enhancing quality of life, and promoting public health.



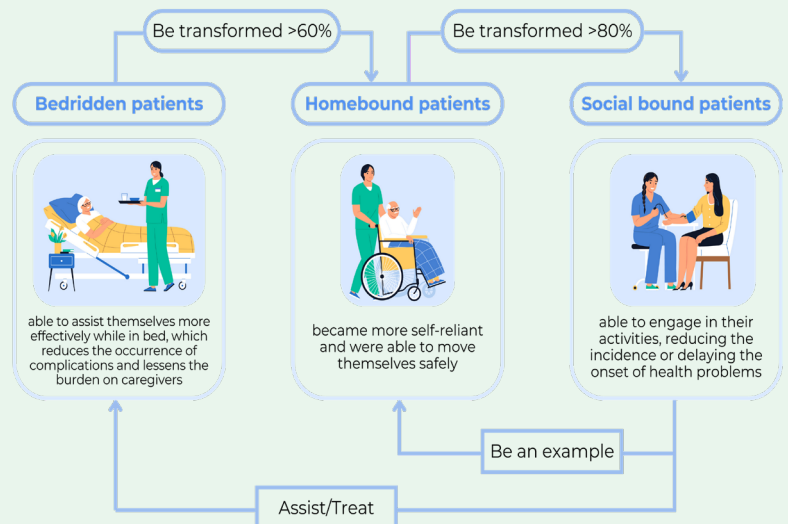
### Mobile Physical Therapy Clinic for the Community

The Faculty of Physical Therapy initiated the Mobile Physical Therapy Clinic Project in 2010 to serve the communities surrounding Mahidol University and improve the quality of life for people in a sustainable way. This initiative operates through both domestic and international networks, offering health promotion, prevention, treatment, and rehabilitation services. The project uses community-specific issues to design services that address the needs of all 5 age groups. Additionally, it aims to create model communities capable of self-care by leveraging physical therapy expertise and networks. Over its 14 years of operation, the scope of services and academic services has expanded to 12 health districts nationwide, yielding the following outcomes:

- 1) 88% of bedridden patients improved to homebound status, and 62% of homebound patients improved to social bound patients.
- 2) The establishment of 3 continuous training courses: a short-term course (4 months) in community physical therapy, a physical therapy training course for family care teams, and a community elderly physical therapy training course.
- 3) Intellectual property registration in the copyright category (literature): The Caregiving Manual for Caregivers (CMC).
- 4) The creation of innovations in physical therapy technology and remote therapy activities through the HealthcaRe Tele-delivery Service (HeaRTS) project.

Importantly, this project helps physical therapy students develop into empathetic healthcare professionals, enabling them to provide services in real-world settings and solve problems through learning tasks. The initiative also generates knowledge that empowers communities to achieve good health and become self-reliant in a sustainable way.

### The Result of Community Support



## 4 QUALITY EDUCATION



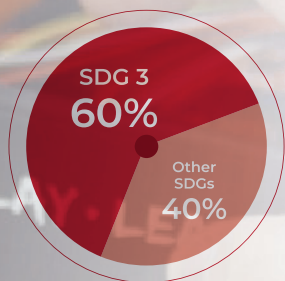
**418**  
Researchers



**107**  
Research units



**562**  
Research output



The University has received over 2,256 million baht in research funding for 3,121 projects. These projects are divided as follows: 873 in science, technology, engineering, and mathematics (STEM); 2,075 in medicine, public health, and health sciences; and 173 in the arts, humanities, and social sciences.

# SDG 4 QUALITY EDUCATION

## Lifelong Learning Policy

Mahidol University strives to promote universal and equal access to quality education for all, while supporting lifelong learning opportunities. The Lifelong Learning Policy was established to ensure equality and support disadvantaged students, particularly those with disabilities or challenging family circumstances. This policy also aims to provide educational opportunities for everyone, without any direct or indirect discrimination based on race, religion, disability, origin, or gender.

- Provide academic services and educational resources that are accessible to all, promote equality, and assist disadvantaged students, especially those with disabilities and challenging family circumstances, ensuring that everyone has access to educational opportunities. These services are delivered through a learning system, including Mahidol University Extension (MUX), library services, learning centers, and Sireeruckhachati Nature Learning Park.

- Promote and support the use of educational technology and e-Learning, develop a Flexible Education Model, and create online lessons in the form of micro-credentials. This approach allows learners to manage their education according to their potential and facilitates the transfer and accumulation of credits in the credit bank.

## Research and Publication

In 2023, the University published 2,363 works related to sustainable development (as referenced from the Scopus database). Most of these publications align with Sustainable Development Goal (SDG) 3: Good Health and Well-being, accounting for approximately 60%, as Mahidol University has faculties/institutes/centers that play prominent roles in medicine, public health, and health sciences. However, the University continues to develop and place emphasis on other fields such as science, technology, engineering, liberal arts, and social sciences. This is reflected in the publications aligned with other goals, representing approximately 40%, and the substantial number of research projects and funds that continue to support and advance these areas on par with health sciences.

SDGs	Publication	Proportion
SDG 1	28	1.18 %
SDG 2	76	3.22 %
SDG 3	1,428	60.43 %
SDG 4	75	3.17 %
SDG 5	47	1.99 %
SDG 6	62	2.62 %
SDG 7	75	3.17 %
SDG 8	67	2.84 %
SDG 9	74	3.13 %
SDG 10	71	3.00 %
SDG 11	52	2.20 %
SDG 12	74	3.13 %
SDG 13	45	1.90 %
SDG 14	46	1.95 %
SDG 15	63	2.67 %
SDG 16	80	3.39 %
<b>Total</b>	<b>2,363</b>	<b>100 %</b>

Research by subject area	Number of Projects	Research Fund (million Baht)	Research Fund (Baht)
Science, Technology, Engineering, and Mathematics	873	601	600,878,880
Health, Medicine, Public Health, and Health Sciences	2,075	1,487	1,486,888,126
Arts & Humanities / Social Sciences	173	168	167,798,593
<b>Total</b>	<b>3,121</b>	<b>2,256</b>	<b>2,255,565,599</b>

## Online Education Platform

Mahidol University is committed to serving as a hub of diverse knowledge through various online platforms such as YouTube, Facebook, TikTok, and LINE Official, among others. The aim is to communicate knowledge, information, and entertainment in various fields such as art, music, sports, language, health, technology, animals, careers, and other creative activities in an engaging and easily understandable manner. Over nearly 10 years of operation (since 2015), the University has produced a variety of knowledge-rich content. In line with our commitment to promoting “Life Long Learning” for all, we continue to create new content that addresses current needs in the form of online courses. Additionally, existing content has been reorganized into online course formats under the Mahidol Channel Academy (MCA), with knowledgeable Mahidol professors, doctors, staff, and students reviewing the information to ensure it is both reliable and accurate.

4,018,857 cumulative subscribers of all channels

719,650,910 cumulative views or plays of all channels



## STEM & ROBOTICS CAMP

The Institute of Innovative Learning is dedicated to promoting and enhancing the learning process for learners at all levels by offering both theoretical and practical training and workshops for students and teachers. As part of this mission, the STEM & ROBOTICS CAMP workshop project was launched to develop 21st-century skills in coding for both teachers and students.

### 3D Working Process:

- 1) Coding Workshops for Students and Teachers
- 2) Research and Development of Coding Teaching Methods for Teachers
- 3) Research and Development of Coding Teaching Materials

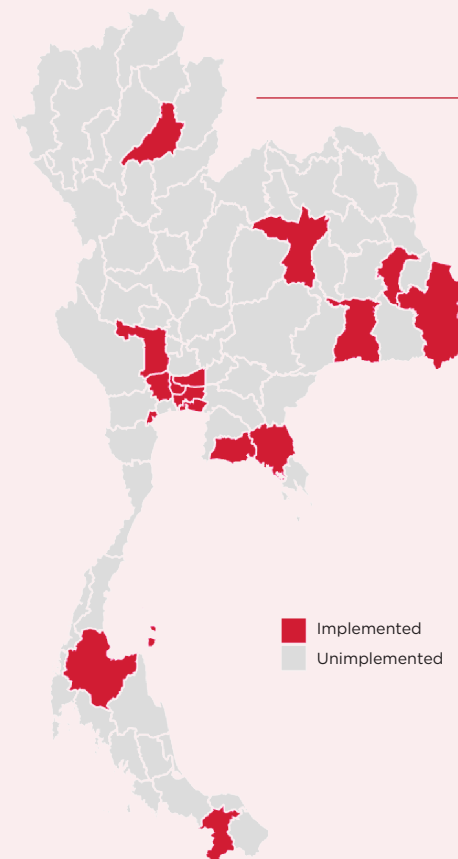
### Concept and Working Principles:

- 1) Teaching materials used in organizing activities must be inexpensive and easily accessible.
- 2) The teaching and learning process must be accessible to learners, meaning it should be easy to understand and engaging.
- 3) Organize activities for teachers and students across all regions of Thailand.
- 4) Promote the sustainable development of teachers by applying the activity model through

## Coding

From the survey of participants' feedback on the activity model of the STEM & ROBOTICS CAMP, it was found that the top 3 activities effectively promoted the participants' skills, which are:

D5: Collaboration, Teamwork & Leadership Skills  
D3: Creativity & Innovation Skills  
D6: Computing & ICT Literacy Skills





**282**  
Researchers



**76**  
Research  
units



**573**  
Research  
output

# SDG 5

## GENDER EQUALITY

### Protection Against Sexual Harassment Policy

Mahidol University promotes equality among individuals and strives to create an organization free from sexual harassment or abuse by fostering an environment where all members treat each other with dignity and respect, and by prohibiting any acts of sexual harassment or abuse.

- Create an organizational culture at Mahidol University and instilling values in executives, employees, staff, and students to treat each other with respect and uphold human dignity. This includes ensuring gender equality, avoiding unfair discrimination based on gender, and prohibiting any form of sexual harassment both inside and outside the University.
- Create a positive environment and atmosphere within Mahidol University and promote safety to prevent sexual harassment or abuse both on campus and outside of Mahidol University.
- Establish mechanisms and processes to prevent and address sexual harassment or abuse within and outside of Mahidol University, including setting up a unit to handle complaints related to sexual harassment or abuse for students and staff.

### Population

Currently, the University has a total of 68,326 population including 38,642 of staff and 29,684 of students.

Position	Number of Staff		
	Total	Male	Female
<b>Academic Staff</b>	<b>4,092</b>	<b>1,846</b>	<b>2,246</b>
• Lecturer	1,334	614	720
• Professor	160	80	80
• Associate Professor	1,077	495	582
• Assistant Professor	1,378	614	764
• Researcher	143	43	100
<b>Supporting Staff</b>	<b>34,550</b>	<b>7,791</b>	<b>26,759</b>
• Operational Support Assistant	13,991	3,936	10,055
• Operational Support	4,579	907	3,672
• Academic Support	4,037	1,151	2,886
• Specific Profession Support	11,943	1,797	10,146
<b>Grand Total</b>	<b>38,642</b>	<b>9,637</b>	<b>10,146</b>

Educational level	Number of students		
	Total	Male	Female
Diploma	654	155	499
Bachelor's degree	22,150	8,373	13,777
Graduate Diploma	4	1	3
Master's degree	4,549	1,464	3,085
Higher Graduate Diploma	702	287	415
Doctoral degree	1,625	705	920
<b>Grand Total</b>	<b>29,684</b>	<b>10,985</b>	<b>18,699</b>

## Festival

### Gender Festival

Mahidol University International College (MUIC) organized the Gender Festival during Pride Month, with activities aimed at promoting gender equality and women's rights awareness.

- Two roundtable discussions on the topics of "Women's Leadership in Politics, Diplomacy and Law" and "How to L.O.V.E Training Session" involve guest speakers sharing their insights and experiences,
- Two talks entitled "Dream with Pride" and "Circle of Life," together with an art exhibition.
- A workshop entitled "Out 4 Mental Health"
- An exhibition entitled "The Promotion and Protection of the Rights of Women and Children" by the ACWC ASEAN Commission on the Promotion and Protection of the Rights of Women and Children, the Institute of HIV Research and Innovation (IHRI), and IRGA's Witchcraft and Gender Representation Class.
- Signing of the petition supporting the law for Marriage Equality

### Human Right Festival

The Institute of Human Rights and Peace Studies organizes the Human Rights Festival in November every year. The festival including five small campaigns in various human rights topics such as:

- Good Neighbors campaigns to Support ReFugees on the Thailand - Myanmar Border
- My data, My choice
- Children of no State
- Violence against women: take action before it's too late
- SET US FREE



### Sexual Health Clinic



**Gen V Clinic, Ramathibodi Hospital :** Gen V Clinic, Ramathibodi Hospital: This clinic offers comprehensive care for the gender-diverse community, addressing needs related to body, mind, and family. Services include surgery, hormone therapy, counseling for LGBTQ individuals and their families, advice for self- adjustment, and pre-operative assessments for those seeking to affirm their gender identity. A multidisciplinary team of doctors provides these services. The clinic opens every Friday from 1:00 PM to 4:00 PM on the 2nd floor of the Main Building (Building 1), Faculty of Medicine Ramathibodi Hospital, Mahidol University. For more information, contact 0-2201-2799 or visit Facebook Page: Gen V Clinic.

**Gender Diverse Clinic, Siriraj Hospital (SI-PRIDE) :** The primary goal of the clinic is to provide care for gender-diverse communities. Its mission includes offering consultations, advising on proper hormone usage, assessing health risks, evaluating readiness for surgery, providing mental health care, and conducting annual health check-ups. For advice or consultations, please visit Facebook Page: SI-PRIDE Gender Diverse Clinic, Siriraj Hospital, or call 0-2419-4657-8.

## 6 CLEAN WATER AND SANITATION



**294**  
Researchers



**80**  
Research units



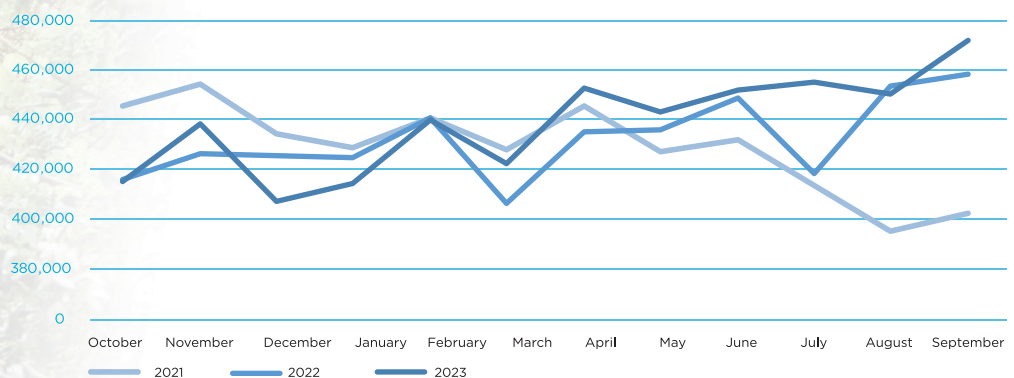
**668**  
Research output

# SDG 6 CLEAN WATER AND SANITATION

## Water Consumption

In 2023, the entire Mahidol University increase its water consumption by around 1.42 %. A total amount of 5.27 million cubic meters of tap water was supplied for all our 6 campuses. Water consumption obviously decreased in December 2022.

*Water consumption (cubic meter) of Mahidol University in fiscal year 2021 - 2023*



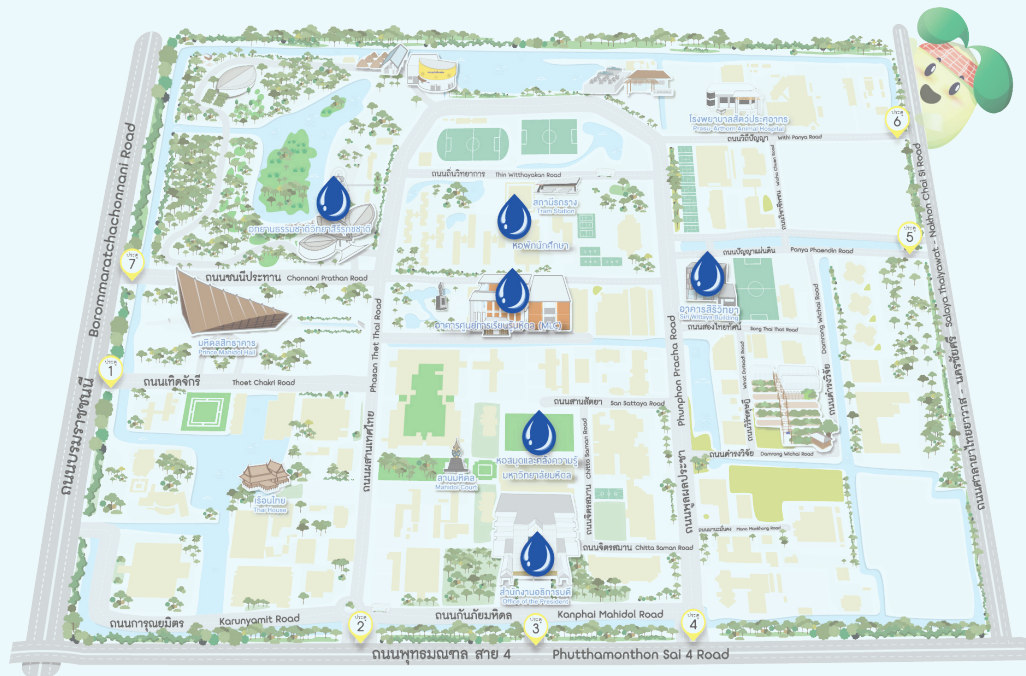
## Wastewater Treatment System & Water Recycling System

The wastewater treatment system at the Salaya campus employs an aerobic biological treatment process, known as activated sludge, with the capacity to treat approximately 1,000 cubic meters of wastewater daily from 17 distinct units. This treated wastewater serves multiple beneficial purposes, including enhancing recreational areas, irrigating landscapes, cleaning shuttle buses, and replenishing the internal university canal to preserve water levels.

Notably, the campus's water management approach adheres to eco-conscious principles, operating as a zero-discharge system wherein 100% of the water is efficiently recycled. Furthermore, the discharge of treated wastewater into rainwater storage canals is meticulously managed, fostering the maintenance of the campus's picturesque landscape and affirming its status as a 'Zero Discharge' campus.

## Free Drinking Water

Mahidol University install complimentary 12 drinking water dispensers across 6 key public areas within the Salaya campus. This strategic move aimed to guarantee easy access to clean and safe drinking water for our community. To ensure the safety and quality of the drinking water provided, comprehensive analysis is conducted biannually. This rigorous testing assures that the water adheres to the highest safety standards, being certified in accordance with NSF/ANSI 61 and 372. This service is open to students, staff, and visitors within our campus vicinity. Beyond facilitating access to clean water, this initiative aligns with our commitment to reducing plastic waste. By encouraging individuals to utilize their own water containers, we contribute to the reduction of plastic bottle consumption. As a testament to the project's impact, 2023 marked the achievement of eliminating up to 1,391,577 plastic bottles.

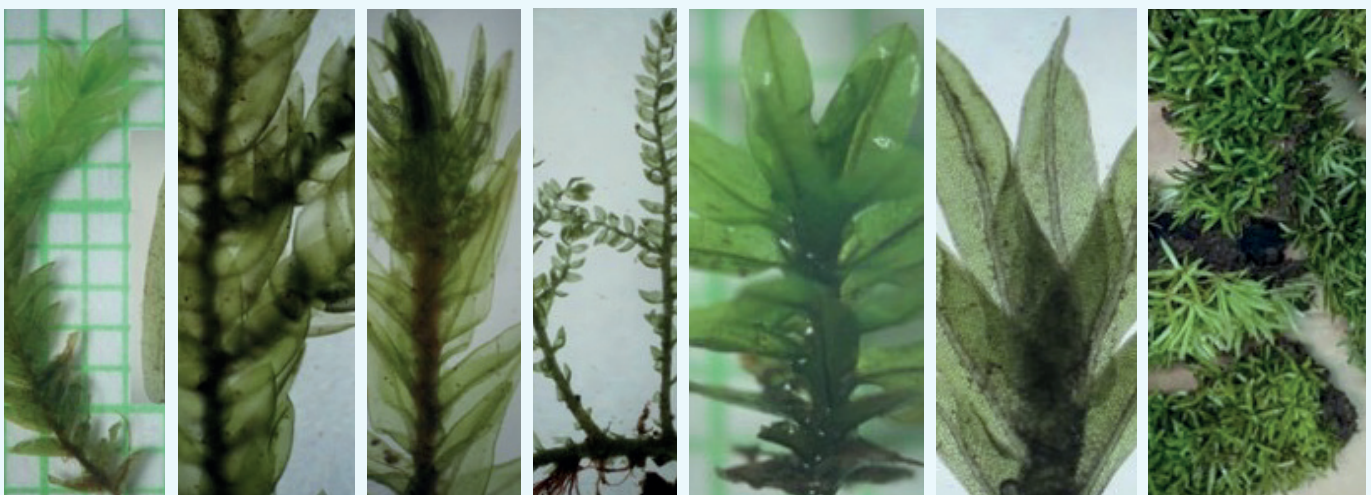


*free drinking water stations*

### *Copper Moss Treats Heavy Metals*

Nakhon Sawan Campus discovered the properties of a rare species of moss known as "rare copper moss" (*Scopelophila cataractae*), which can be used to treat heavy metal contamination. The discovery occurred during fieldwork at a waterfall stream near Wat Phalat, Doi Suthep, Chiang Mai Province, in collaboration with researchers from Chiang Mai University. The team collected samples of the moss for further study in the laboratory to examine its structure and potential applications. They found that copper moss, despite being classified as a "micro-plant," is resilient, adaptable, and effective in removing heavy metals such as copper and cadmium. Additionally, this moss can serve as a bioindicator to assess the environmental impact of human-caused pollution. Due to its lack of a cell wall, the moss can absorb and store large amounts of heavy metals in its cells—up to approximately 10,000 milligrams per kilogram—making it more effective than larger plants for this purpose.

The research team is also exploring the potential of various moss species in the Mae Tao River Basin, Mae Sot District, Tak Province—an area that has faced cadmium and zinc contamination for decades. The survey revealed that *Bryum coronatum* moss accumulated over 300,000 mg/kg of zinc in its tissue, while *Philonotis thwaitesii* accumulated up to 50 mg/kg of cadmium, making both species suitable for use in heavy metal remediation and as bioindicators. Additionally, the discovery of Christmas Moss (*Vesicularia montagnei*) holds economic potential. This moss can be grown and propagated in large quantities, making it ideal for decorating buildings, landscapes, and waterfalls to enhance aesthetic appeal. In the past, Nakhon Sawan Campus has provided academic services to local communities and interested individuals, offering knowledge on tissue culture techniques for propagating "micro-plant," helping communities generate income and work toward sustainability.



## 7 AFFORDABLE AND CLEAN ENERGY



**432**  
Researchers



**96**  
Research units



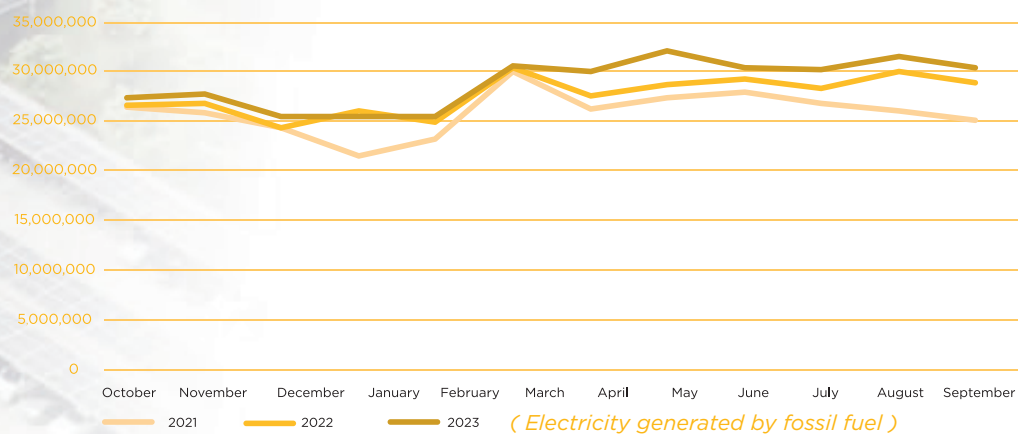
**1,052**  
Research output

# SDG 7 AFFORDABLE AND CLEAN ENERGY

## Electricity Consumption

In the 2023 fiscal year, Mahidol University's total electricity consumption reached 344,953 MWh, reflecting a 4.68% increase compared to the previous year. This significant rise in consumption was particularly evident beginning in March.

Electricity consumption (kWh) of Mahidol University in fiscal year 2021-2023



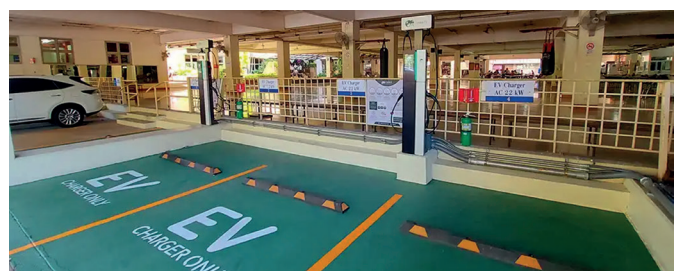
## Renewable Energy Consumption

In the 2023 fiscal year, All campuses of Mahidol University produce 5,243,451 kWh of solar power. In 2023, a significant solar rooftop and smart electricity project was launched at the Salaya campus. This initiative includes the installation of solar panels on various rooftops, parking structures, and the water surfaces of two ponds, producing approximately 12 megawatts of electricity. The project also plans to implement a smart electricity system aimed at reducing fossil fuel-based electricity consumption by around 35% at the Salaya campus. This solar energy will be utilized starting in November 2023. This initiative underscores the university's commitment to sustainable energy practices and environmental stewardship.

## EV Charging Station in Salaya Campus

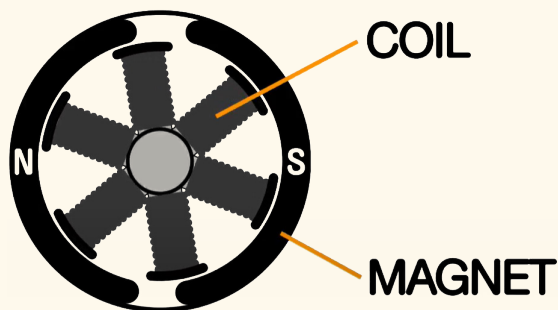
As an increasing number of vehicles are being designed to operate on clean energy sources, such as electricity, the University has partnered with the private sector to establish clean energy charging stations. The following service points are available in the Salaya Campus:

1. Mahidol University International College Building 1
2. Prince Mahidol Hall Conference Center
3. Golden Jubilee Medical Center



## Counter-Rotating Wind Generators

The Research Center and Technology Development for Environmental Innovation (REI) at the Faculty of Environment and Resource Studies, Mahidol University, has developed an innovative "counter-rotating wind generator," a new type of wind power generator. This generator operates by creating counter-rotation in the components that generate electricity, enhancing the generator's rotation to produce more electricity. The energy generated can be used as an immediate "alternative energy" source or stored in backup batteries for use as "supplementary energy" when needed. The efficiency of electricity generation depends on the wind force that drives the blades. Natural wind energy may not always be as powerful or stable as wind produced by industrial or agricultural waste. However, the production of electricity can be increased by up to 3 times by employing the counter-rotation principle to increase wind power generation.



## Mixtures for Producing Hythane

The Faculty of Environment and Resource Studies at Mahidol University is the owner of a patented innovation for a "mixture that produces hythane" from hydrogen and methane, derived from the co-digestion of molasses and brewer's yeast cells. "Hythane" is a fuel composed of hydrogen, methane, and carbon dioxide in the following ratio: 5-10% hydrogen, 50-65% methane, and 30-40% carbon dioxide. This "bio-hythane" can be used to generate electricity through a generator or as fuel for vehicles, providing energy savings. The research focuses on utilizing sugar mill waste, particularly "vinasse" (the byproduct from ethanol production from molasses, high in organic matter) and "spent brewer's yeast" (yeast cells used in the ethanol production process). Based on the concept of "zero waste," the remaining byproducts from bio-hythane production, such as effluent and anaerobic digestate, can be further processed to produce "bioplastics" (Polyhydroxybutyrate; PHB) and "fertilizer pellets" for the agricultural sector. Fly ash was used in the research to control pH fluctuations during the hydrogen production process, where volatile fatty acids are produced, causing a drop in pH that can affect hydrogen-producing microorganisms. The study found that "fly ash" effectively stabilized the pH and provided "trace elements", which boosted enzyme activity in the microorganisms vital for the process. Additionally, while "yeast waste" served as a "nitrogen" source in co-digestion with molasses, it is also rich in "beta-glucan", making it suitable for use as "animal feed" to strengthen immune systems and prevent illness in animals.

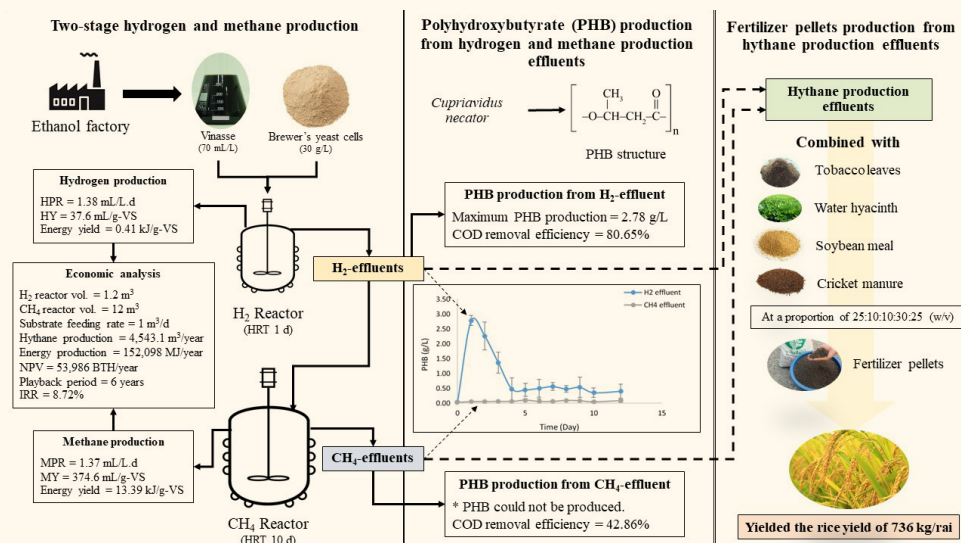


Photo: Hydrogen and methane production from co-digested of molasses and brewer's yeast cells



284  
Researchers



67  
Research  
units



489  
Research  
output

# SDG 8

## DECENT WORK AND ECONOMIC GROWTH

### *Staff Welfare and Benefit*

In 2023, Mahidol University issued the Mahidol University Regulations on Provident Funds (No. 2), 2023.

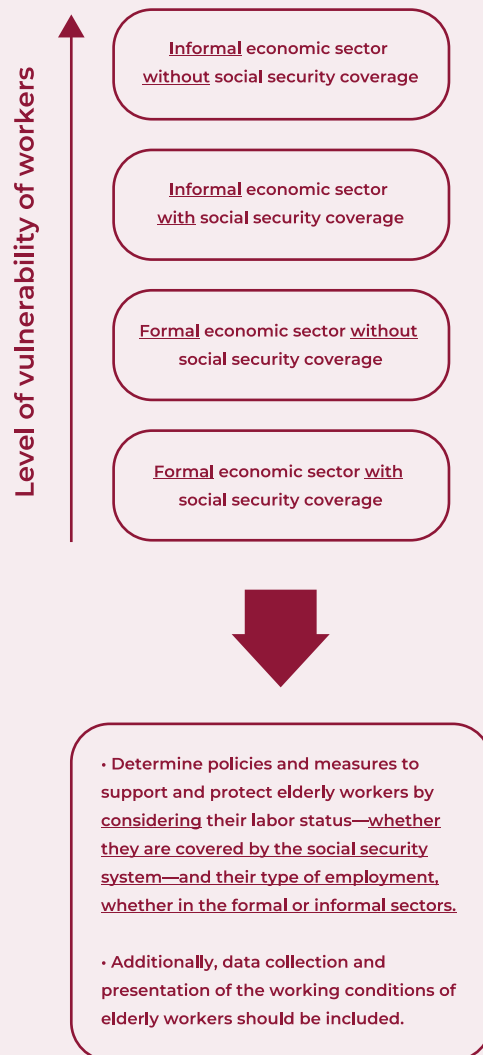
1. Allow members who have resigned from the provident fund but remain employed to rejoin the fund, under specified conditions.
2. Permit members to change their provident fund contribution rate twice a year instead of once.
3. Increase the employer's contribution to the provident fund from 3% to 4% of the member's salary, providing savings benefits for university staff, employees, and permanent staff hired through external funding upon their departure.

### *Promoting Innovation and Sustainable Economic Growth in SMEs: Insights from Recent Research*

In alignment with Mahidol University's commitment to Sustainable Development Goal 8—which focuses on promoting inclusive and sustainable economic growth, employment, and decent work for all—this report highlights a significant research study on how small and medium-sized enterprises (SMEs) can drive sustainable economic development through innovation and sustainable practices. The research, titled "Sustainable Development towards Openness SME Innovation: Taking Advantage of Intellectual Capital, Sustainable Initiatives, and Open Innovation," provides valuable insights into the critical roles of intellectual capital, sustainable initiatives, and open innovation in fostering sustainable development within SMEs, which are vital contributors to economic growth and employment. The study emphasizes the importance of intellectual capital—comprising knowledge, skills, and expertise—as a foundational element for innovation in SMEs. Businesses with robust intellectual capital are better positioned to implement sustainable practices and adapt to changing market demands, which directly contributes to economic growth and the improvement of working conditions. This aligns with the goals of SDG 8, which advocates for sustained economic growth and full, productive employment. SMEs that engage in sustainable initiatives, such as environmental stewardship and social responsibility, are not only enhancing their competitiveness but also contributing to broader sustainable development goals. The research highlights that such initiatives help SMEs align their operations with global sustainability standards, thereby supporting the inclusive economic growth that SDG 8 aims to achieve. The concept of open innovation, where SMEs collaborate with external partners, is identified as a key factor in accelerating innovation and driving sustainable economic growth. The study finds that openness in innovation processes enables SMEs to access new ideas, technologies, and markets, which are essential for their long-term sustainability and competitiveness. This approach also supports the creation of decent work environments by fostering innovation-led growth. Mahidol University can leverage these insights by fostering collaboration between academia and SMEs, promoting sustainable business practices, and acting as a hub for open innovation. By integrating these strategies, the university supports SDG 8, contributing to sustainable economic development and the creation of decent work opportunities. This research highlights practical strategies for SMEs to achieve sustainable growth, which Mahidol University can use to further its sustainability goals and regional economic impact.

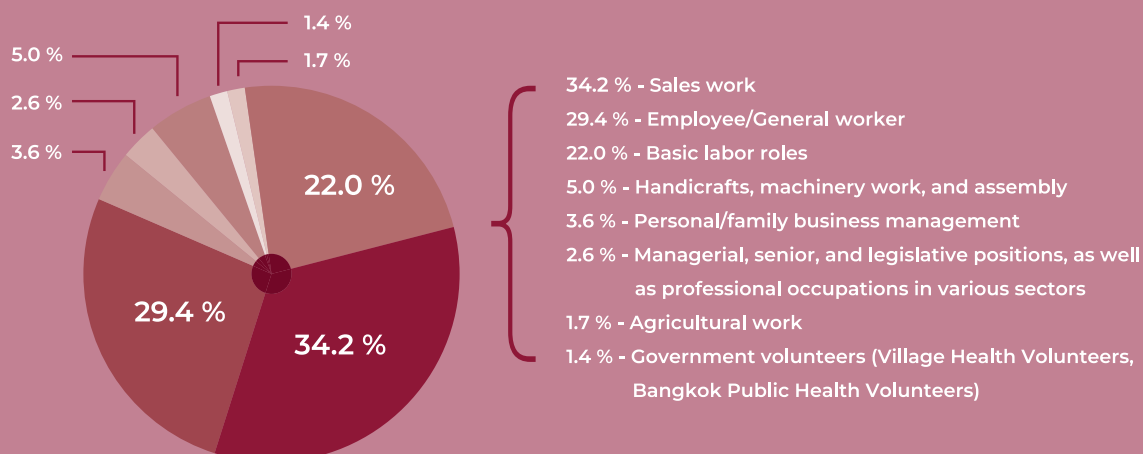
## Informal Older Workers and Transitions in Work Status of Thai Older Workers

As Thailand progresses towards becoming a fully aged society, with over 20% of its population aged 60 and above, there is an urgent need to focus on the extension of working years, support for older workers, and the safeguarding of their economic independence and dignity. A study conducted by Mahidol University examined the working conditions and employment transitions of older informal workers in Thailand. This research is crucial for understanding the challenges faced by older workers and informing policies that promote sustainable and inclusive economic growth, in line with the United Nations Sustainable Development Goal 8 (SDG 8). The study utilized secondary data from the National Statistical Office (NSO) and primary data collected through structured surveys. Key findings revealed a significant trend of older workers moving from formal to informal employment as they age, particularly after the age of 50. This transition is more pronounced among women and those with lower levels of education. Informal older workers, who often lack social security coverage, face greater job-related challenges, including low income and difficult working conditions. To address these challenges and support the well-being of older workers, the study recommends several policy measures. These include expanding social security coverage, particularly under Sections 39 and 40, promoting the continued employment of skilled older workers, providing career guidance and skill development opportunities for pre-aging workers, and considering household-level factors in policy development. Implementing these recommendations will contribute to a more inclusive labor market, ensuring that older workers can continue to contribute to society with dignity and economic security. Mahidol University is committed to advancing research and policy recommendations that align with SDG 8, focusing on promoting sustained, inclusive, and sustainable economic growth, full and productive employment, and decent work for all, including older workers in Thailand.



### Suggestions on the Definition of Informal and Formal Worker Status

#### Job description or occupations of elderly workers





**352**  
Researchers



**93**  
Research  
units



**632**  
Research  
output

# SDG 9

## INDUSTRY, INNOVATION AND INFRASTRUCTURE

### Intellectual Property

Mahidol University is committed to fostering innovation through its investment in research aimed at addressing contemporary global challenges. Between 2020 and 2023, the University registered over 2,038 research projects for intellectual property rights, including patents (both domestic and international), petty patents, copyrights, trademarks, and trade secrets. In fiscal year 2023, Mahidol University generated more than 28 million baht (28,164,992 Baht) in revenue from the commercial use of 81 research outcomes and intellectual properties. Furthermore, 45 spin-off companies were established to commercialize these innovations, with the University retaining ownership of the underlying intellectual property for continued utilization.

### Number of registered intellectual property

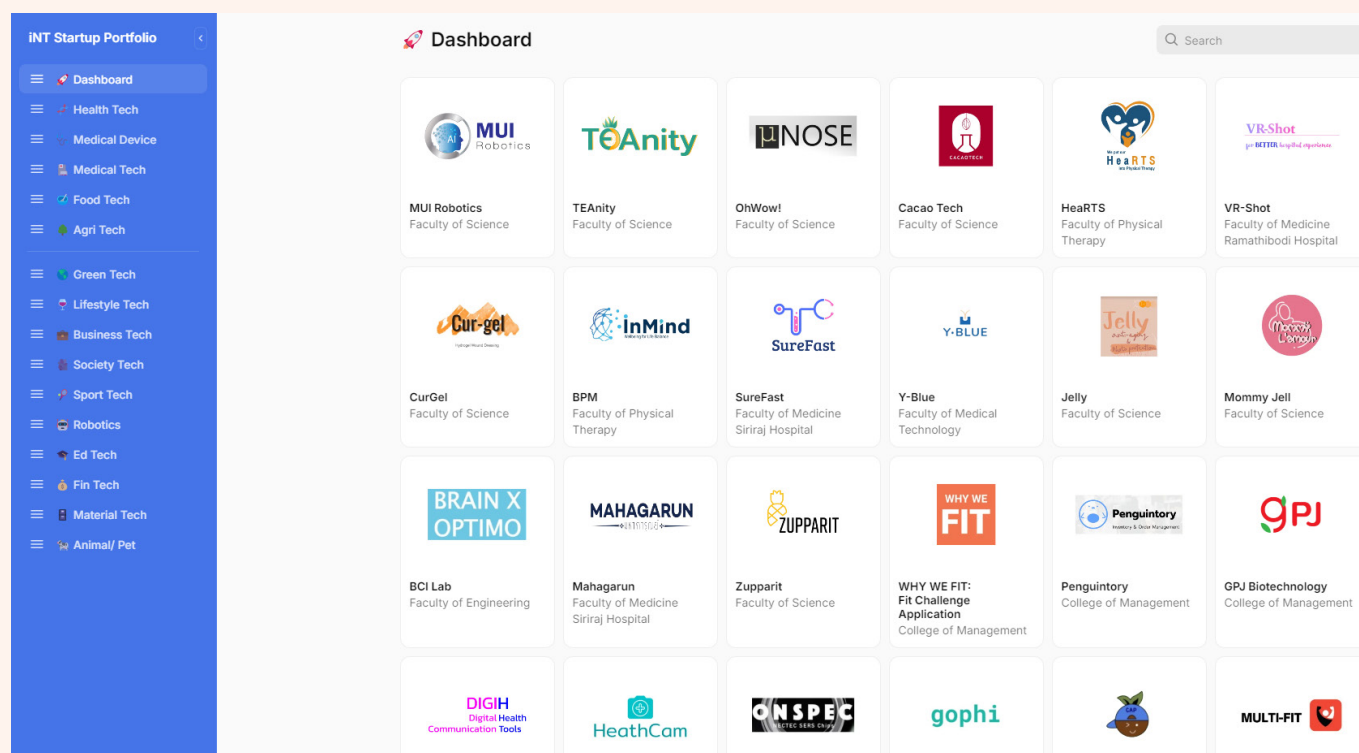
Type	2020	2021	2022	2023
Patent	6	32	9	30
International patent	0	5	0	24
Petty patent	10	87	30	52
Copyright	480	409	344	452
Trademark	1	26	15	9
Trade Secrets	0	9	0	8

### Funding

Name	Funding	Detail
Mahidol University Innovation and Entrepreneurship Development Fund for Commercialization Project	10,000 – 200,000 baht	Funding to support product development, such as costs for proof of concept, materials, prototype production, and business/marketing plan preparation.
Pre-Talent Mobility	Max. 30,000 baht/project	Funds to support and encourage research staff in higher education institutions to work on solving problems and increasing production capacity in the industrial sector.
Pre-Seed Fund: High-quality research receiving funding for further development	Not exceeding 1,500,000 baht/project	Funding to support the development of research results into commercial businesses. Duration of implementation: July 2022 – June 2023
Mahidol Incubation Program 2023	30,000 baht/project	Funds to support and encourage research staff in higher education institutions to work on solving problems and increasing production capacity in the industrial sector.
Mahidol Startup Thailand League 2023	25,000 baht/team	Funds for undergraduate to doctoral students with innovative ideas and an interest in entrepreneurship.

## Mahidol Startup Portfolio

The University promotes the development of start-up businesses and supports the creation of enterprises based on new innovations. Additionally, it encourages researchers to collaborate with external agencies to develop research that produces innovation. The University also provides guidance and training on intellectual property protection, registration, promotion, utilization, and technology transfer derived from intellectual property. This ensures the protection of the interests of both researchers and the University in relation to the utilization of intellectual property. Furthermore, start-up businesses that emerge from Mahidol University's technology are listed, with details available on the website at <https://int.mahidol.ac.th>.



### Examples of startups founded by professors, researchers, and students in the Faculty of Science:

1. Electronic Nose: A digital odor detector for product quality control and health monitoring by MUI Robotics.
2. Flo Wolffia: A superfood product of the future made from Wolffia arrhiza by Advanced Greenfarm.
3. Ginger Spray and dietary supplements from white turmeric extract by the Center of Excellence in Drug Discovery (ECDD).
4. Circular mRNA for vaccine development and medical testing by BIOadventure.
5. Anti-aging and skin booster extract by AgingSerenity
6. Pineapple fiber innovation to add economic value to agricultural waste by TEAnity.
7. COVID-19 test kit with RT-LAMP color-changing technology, providing results within 30 minutes, by Zenostic.

### CANDEE Application

CANDEE Application is designed to promote health care and encourage participation in various good deeds activities (<https://www.candee.co.th/>). The Application connects with health care applications and allows users to exchange tokens earned from activities such as exercise, performing good deeds, and participating in faculty events for various rewards. Developed on a blockchain platform in collaboration with Honda Automobile (Thailand) Co., Ltd. (Honda), Bitkub Blockchain Technology Co., Ltd. (Bitkub), and the Faculty of Medical Technology at Mahidol University, the app utilizes blockchain technology to connect and process data, as well as perform transactions. The project aims to create and implement an application that fosters good deeds while promoting individual, group, and societal health in a sustainable manner for the future to come.

## 10 REDUCED INEQUALITIES



**312**  
Researchers



**91**  
Research  
units



**515**  
Research  
output

# SDG 10

## REDUCED INEQUALITIES

### Nationality & Disability

Differences in race, religion, or thoughts are possible and happen everywhere. We merely need to acknowledge and understand that difference without limiting the freedom or rights of others. Educational institutions are settings for both practical and theoretical learning, hands-on training, and social interaction. Therefore, it should be open to all groups of people regardless of their ethnicity, religion, or disabilities. As a result, everyone can seize opportunities, learn and develop various skills, and grab social opportunities to acquire a sense of belonging. In this way, inequality is reduced and everyone have equal access to opportunities and resources. In short, Mahidol University provides both education and work opportunities for all groups of people.

### Students

In academic year 2023, Mahidol University had a total of 29,684 students, which were 1,553 foreign students, accounting for 5.23%.

Educational level	Total number of students	Number of international students	Number of students with disabilities
Diploma	654	7	0
Bachelor's degree	22,150	588	61
Graduate Diploma	4	0	0
Master's degree	4,549	564	9
Higher Graduate Diploma	702	0	0
Doctoral degree	1,625	394	0
<b>Grand Total</b>	<b>29,684</b>	<b>1,553</b>	<b>70</b>

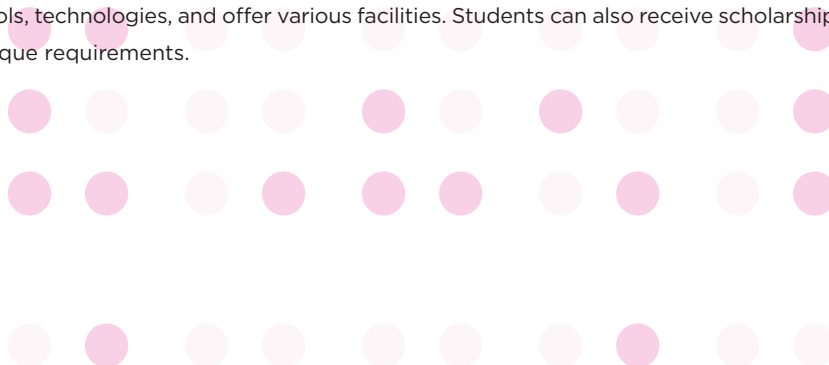
The number of students with disabilities in academic year 2023 was 70, accounting for 0.24% of all students. They are Thai students and Indonesian with one or more disabilities, including visual, auditory, physical disability, learning disorder, autism, or multiple disabilities.

### Disability Support Services

The Disability Support Services Mahidol University (DSS Mahidol) unit provides assistance to students with disabilities to allow equitable access to the university's teaching and learning system. It provides solutions to problems and offers individualized support to help students with disabilities achieve their academic goals, and fosters a caring university community where everyone lives together regardless of disability.

#### Educational Support

Mahidol University has a policy to provide equal educational opportunities so that people with disabilities can also access proper educational services and fulfill their educational goals. The University also offer advice to departments so that staff can arrange for a proper form of education services, for instance, the University also provide exam assistance, produce personalized learning materials like braille textbooks, bas-relief media, tools, technologies, and offer various facilities. Students can also receive scholarship advice and help from volunteers to meet their unique requirements.



In the academic year 2022, support services were provided to 55 students with disabilities, as detailed below:

Types of Services for Students with Disabilities, Academic Year 2022	Service Statistics (Hours)
1. Preparation of Braille documents for visually impaired students (occasions/hours)	-
2. Formatting document pages for visually impaired students (occasions/hours)	2 (3)
3. Conversion of PDF/PPT files to Word files for visually impaired students (occasions/hours)	12 (226)
4. Lending of assistive technology devices for the disabled (occasions/hours)	8 (8)
5. Installation of speech synthesis programs for visually impaired students (occasions/hours)	1 (3)
6. Provision of advice, consultation, tutoring, and training on various skills related to the disabled (occasions/hours)	32 (73)
7. Educational and other support services for hearing-impaired students	-
8. Other services related to the disabled (occasions/hours)	-
<b>Total</b>	<b>55 Occasions (307 Hours)</b>

### Facilities for the Disabled Within Mahidol University, Salaya Campus Only

The Master Plan of Mahidol University, Salaya Campus considers equality in creating an environment that is accessible to everyone. The University has provided 275 ramps, 307 restrooms, 47 parking spaces for wheelchair users, and public transportation options such as sidewalks and bicycle paths. The ramps have been installed to facilitate continuous travel from point to point.

### Inclusive Society

Mahidol University organizes special activities for vulnerable students to foster the University of Equality that leaves no one behind. Students with disabilities can participate in various activities, provided we adjust our attitudes and activities without lowering our standards, as everyone has equal potential. These activities aim to create an inclusive society at Mahidol University.

#### 1. Exhibition Booth at the Event “Study Institutions for Children with Disabilities 2023”—Educational Guidance Fair for People with Disabilities

Educational guidance for disabled students from various universities, sharing experiences from disabled seniors in higher education, and techniques for preparing for entrance exams.

#### 2. Basic Life Support Training for Hearing Impaired Students and Volunteers

The Department of Emergency Medicine at Ramathibodi Hospital provided CPR and AED training to 37 hearing-impaired students and 9 general students, with the help of 2 sign language interpreters. The training was adapted to accommodate the needs of the hearing-impaired participants, using visual cues such as LED signals and CPR rhythm signals instead of sound. The session adhered to Basic Life Support standards, ensuring an inclusive and effective learning experience.

#### 3. Volunteer Training Workshop for Disabled Friends on the Topic of “How to Help People with Physical Disabilities”

This workshop aims to provide students with awareness and knowledge on how to properly assist individuals with physical disabilities and to produce volunteers who can help reduce inequality in access to social activities for people with disabilities.

#### 4. Innovation and Invention Development Project for the Elderly and Disabled:

The Mahidol Friendly Disability project aims to raise awareness and inspire students at Mahidol University to develop innovations for the elderly and disabled, promoting the concept of an “Inclusive Society” and aligning with SDG 10: Reduced Inequalities. The project included lectures on innovation for assistive devices, featuring experts from the Institute for Technology and Innovation Management and NSTDA. Additionally, an “i-CREAtE Event” was held, attracting 255 participants, including both disabled and general students. The initiative fosters understanding and innovation in support of an inclusive and equitable society.



## 11 SUSTAINABLE CITIES AND COMMUNITIES



**309**  
Researchers



**85**  
Research units



**507**  
Research output

# SDG 11

## SUSTAINABLE CITIES AND COMMUNITIES

Because learning is a crucial foundation for human development, Mahidol University, as a leading higher education institution in the country, prioritizes the existence of learning spaces within the University. These spaces are designed to be conducive to education and accessible to individuals of all ages, supporting "Life-long Learning". Mahidol University has established learning spaces both inside and outside of the classroom across all its campuses as follows:

### Co-working Space



- Princess Maha Chakri Sirindhorn Music Library, Library and Knowledge Center
- Co-MU Space located on the 1<sup>st</sup> floor of the Library and Knowledge Center, Mahidol University
- Ma SHARES Co-working space @MUIC (Mahidol University International College)
- Ma SHARES Co-working space @MU Residence (Dormitory Building 10)
- Ma SHARES Co-working Space & Maker Space @MB (Institute of Molecular Biosciences Building)
- Ma SHARES at Salaya (True Lab)

- Oon I Ruk Room (Dormitory Building 11)
- A H I and O Activity House (around the student dormitory)
- 24-hour library service during exam period
- Ma SHARES Co-working Space @MUKA (Mahidol University Kanchanaburi Campus)
- Shared Learning Room @Rajvithi Campus Library



# Co-working Space

## Mahidol Eco Park

Mahidol University is developing an area of approximately 6 rai in front of the Mahidol University Library and Knowledge Center. The project aims to transform this area into a public park and a new landmark on the university campus, serving as a recreational space. This park will offer an alternative environment for teaching and learning, as well as for organizing extracurricular activities under the concept of Activity and Learning. Additionally, the park will connect pedestrian and bicycle paths between the Coverway on the side of Lecture Building 2 and the bicycle path on the north side of the library courtyard, embodying the concept of “Mahidol Eco Park.” The park will be divided into 5 zones:



1. **Mind Zone** : “The Pavilion of Mind” is designed to support activities such as reading and meditation for mental development. It features a large swing with 6 seats.
2. **Mood Zone** : “The Plaza of Mood” is designed to be a space for socializing and relaxation. It includes benches shaded by large trees to create a cool, inviting atmosphere that encourages interaction.
3. **Learn Zone** : “The Pavilion of Learn” is designed to support extra-classroom activities and learning in a natural setting. It is equipped with 15 tables and chairs and a Mini Amphitheatre that can accommodate up to 60 people.
4. **Activity and Culture Zone** : The “Multipurpose Yard” is designed for creative and cultural activities that reflect corporate culture. It can host up to 400 people.
5. **Sense of Place Zone** : This zone features sculpture bases for the installation of temporary or permanent sculptures that convey meanings related to different places, stories, and significance.



## Natural Resource Learning Center, Sireeruckhachati Nature Learning Park

Sireeruckhachati Nature Learning Park spans the area of over 140 rai. This park was established through the efforts of Mahidol University, Salaya Campus, to develop it into a perpetual learning center about nature for people of all ages. The objective is to provide a comprehensive resource that enumerates over 900 distinct types of herbs and their applications, thereby facilitating the acquisition of knowledge about herbal plants. These efforts earned the park the Thailand Tourism Gold Award for Excellence in the Attractions, Learning and Doing category at the 14<sup>th</sup> Thailand Tourism Awards. In addition, Sireeruckhachati Nature Learning Park has passed the assessment and certification for Thai tourism standards, ASEAN tourism standards, and quality criteria for traveler accommodation (Home Lodge) in compliance with public toilet standards for tourism on the fiscal year 2023 from the Department of Tourism.



320  
Researchers74  
Research  
units619  
Research  
output

# SDG 12

## RESPONSIBLE CONSUMPTION AND PRODUCTION

### Waste Management

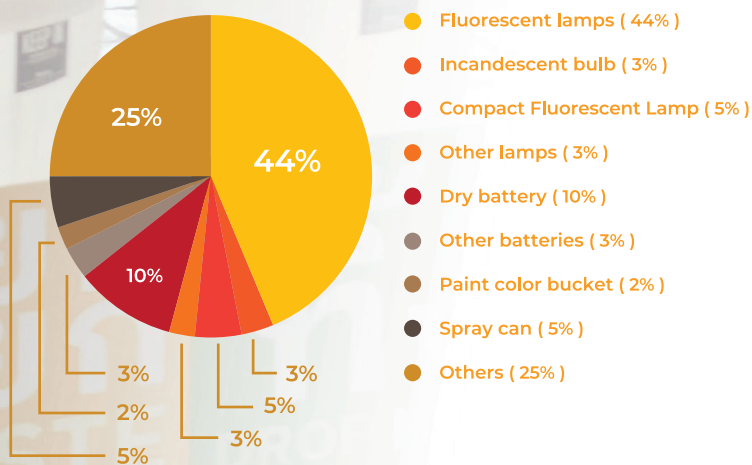
From a survey of all types of waste at Mahidol University, it was found that the proportion of general waste generated in 2023 has increased when compared to 2021 and 2022. The general waste produced is disposed of by landfill in a sanitary practice. However, even though the specific type of waste is being properly disposed of, this method used is still not a sustainable waste management solution. Therefore, Mahidol University is committed to minimizing the amount of waste sent to landfills by providing various types of trash bins at multiple points within buildings to encourage proper waste separation, as well as by implementing projects to promote waste reduction within the University.

### Total waste generated in Mahidol University

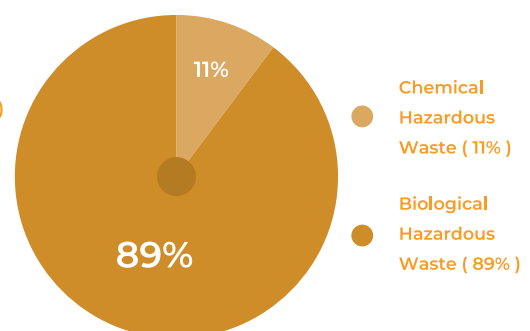
Student Service	2023	
	Ton	Percentage
General Waste	6,082	45.16
Food Waste	3,178	23.60
Recyclable Waste	1,244	9.24
Hazardous Waste	2,963	22.00
Total	13,467	100.00

In addition, Mahidol University has classified community hazardous waste into 13 types, collected from 27 faculties within the Salaya campus. Hazardous waste from laboratories is classified into 2 types: chemical hazardous waste and biological hazardous waste. Both community and laboratory hazardous waste are collected and disposed of properly.

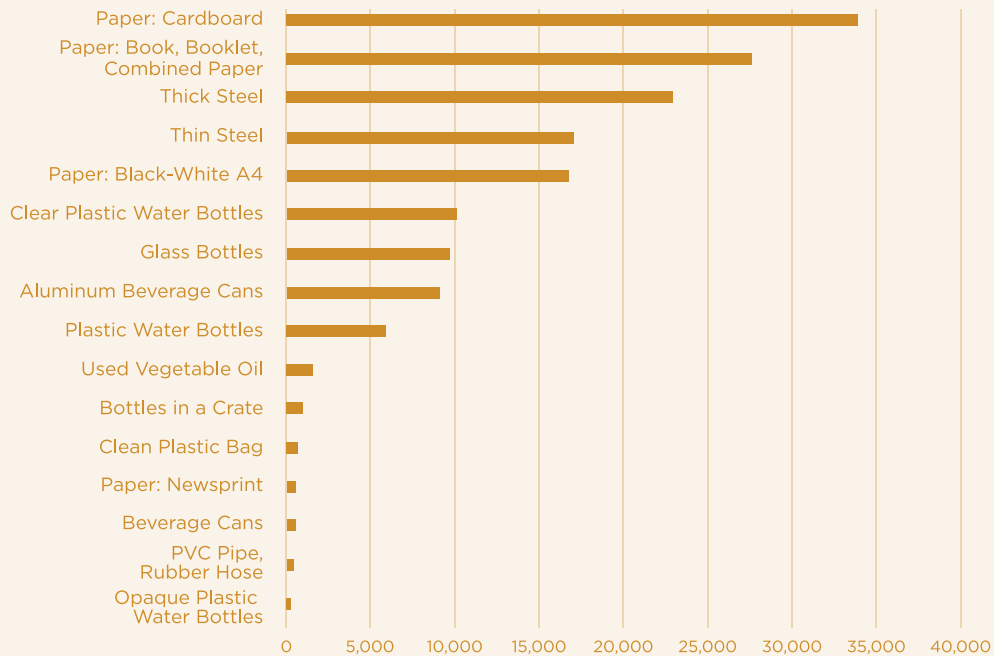
### Household Hazardous Waste



### Laboratory Waste



**The total weight each type of recycle waste in 2023 (Kilogram)**



Mahidol University has been promoting the separation of recyclable waste through the Recyclable Waste Bank Project since 2009, classifying waste into 16 types. In 2023, the project collected 159.10 tons of recyclable waste, with paper being the largest portion. Additionally, Mahidol University implemented the “Orphan Waste” initiative to reduce the amount of general waste sent to landfills. This project, in collaboration with N15 Technology, aims to convert Orphan Waste into energy. Accepted types of Orphan Waste include foam boxes, foam/bubble wrap, food packaging bags, snack bags, old clothing, household items, sports equipment, office equipment, expired medication, car tires, and more. In fiscal year 2023, a total of 12,180 kilograms of Orphan Waste were sent for incineration to produce energy.

“Orphan Waste” refers to non-recyclable waste that lacks a systematic disposal process. This type of waste is not accepted by Waste Banks, but it can be converted into fuel.

### Re-Leaf Project

Sireeruckhachati Nature Learning Park, a large green area within Mahidol University, produces a significant amount of leaf litter each day. Therefore, the park has organized the “Re-Leaf” project to encourage staff from the Project of Institute Establishment for Sireeruckhachati Nature Learning Park, Mahidol University, to leverage their knowledge to create innovations that will heal the environment. This innovation has also become a teaching tool in nature classrooms, leading to the innovative development of “Re-Leaf: a plant pot made from leaf scraps.” The project transforms the abundant leaves in Sireeruckhachati Nature Learning Park into valuable and meaningful products by replacing plastic plant pots with those made from leaves. The goal is to reduce waste incineration, which contributes to PM 2.5 pollution and the environmental damage associated with global warming.

Let “Re-leaf” bring you “Relief,” turning every heart into a “green” mindset so that everyone in the world can wake up to clean air.



196  
Researchers



50  
Research  
units



321  
Research  
output

# SDG 13

## CLIMATE ACTION

Due to the increasing severity of climate change or global warming—evident from seasonal fluctuations, reduced agricultural production, post-disaster crises, and more severe disasters—Mahidol University, as the “Wisdom of The Land,” which produces knowledgeable and expert staff and conducts research across various fields, has prioritized addressing the current environmental situation. Consequently, we established the Net Zero Emission Policy 2021 to promote actions aimed at reducing GHG emissions and increasing GHG absorption areas. Additionally, various efforts are underway to enhance the adaptive capacity to climate change. Environmental operation data from 2023 reveals that Mahidol University has a greenhouse gas emission volume of 183,279 tons of carbon dioxide equivalent (ton CO<sub>2</sub>eq), as shown in the table below.

### Mahidol University Greenhouse Gas Inventory Data 2023

Scope	Source of GHGs Emission	GHGs Emission (tonCO <sub>2</sub> eq)	Percentage
Scope 1 Direct Emissions	Stationary combustion	6,124	3.34%
	Mobile combustion		
	Fugitive emission		
Scope 2 Energy Indirect Emissions	Purchased electricity	172,442	94.09%
Scope 3 Other Indirect Emissions	Purchased water	4,713	2.57%

### Carbon Footprint for Organization

Mahidol University has continuously implemented the Carbon Footprint Project to enhance staff's knowledge and understanding of greenhouse gas accounting and to set the direction and guidelines for the organization to adopt more environmentally friendly operations. In 2023, 2 faculties within the University received certification for their carbon footprint label and carbon offset activities: the Faculty of Public Health and the ASEAN Institute for Health Development.



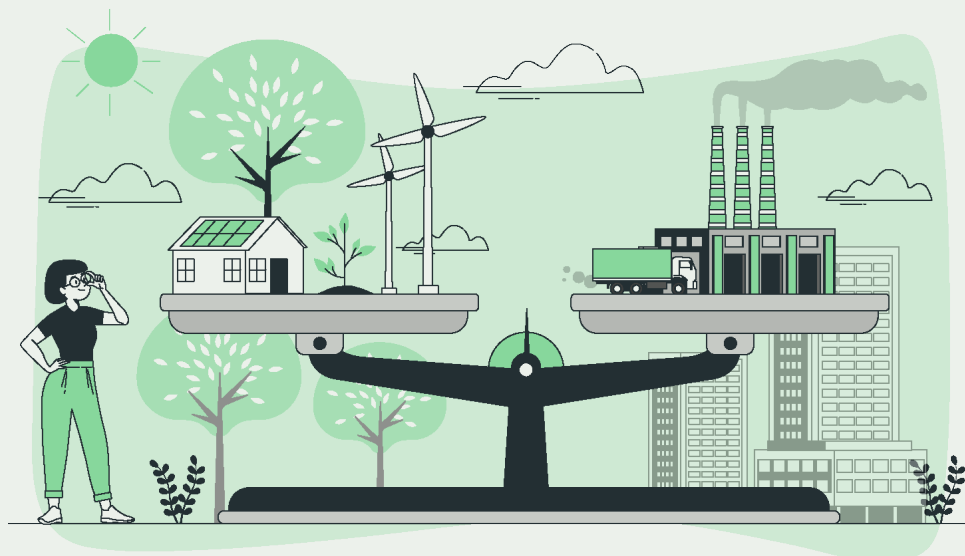
### *Assessment of Carbon Sequestration in Forest Areas at Mahidol University's Nakhon Sawan Campus*

The assessment of carbon sequestration in forest areas at Mahidol University, Nakhon Sawan Campus, aims to study biodiversity and evaluate carbon sequestration in a forest area of 209.87 rai. The assessment involved setting up temporary forest resource survey plots measuring 40×40 meters and systematically sampling using the Line Plot System. Baselines were established in a north-south direction, with survey lines spaced 200 meters apart and plots placed every 100 meters along these lines, totaling 17 plots. This survey area covers 8.10% of the total forest area. The study revealed that the forest is a mixed deciduous ecosystem with a diversity of 48 tree species across 42 genera and 23 families, plus 1 species of bamboo. The top 7 tree species with Importance Value Indexes exceeding 10 are: Ebony, Siamese Neem, Beach Mulberry, Bungor, Indian Walnut, Purple Orchid, and Samaesan, respectively. Regarding carbon sequestration, the assessment found that the above-ground biomass was 2,869.05 kilograms per rai, below-ground biomass was 803.33 kilograms per rai, and carbon sequestration was 1,726.02 kilograms per rai. This results in an estimated total carbon sequestration of 362.24 tons of carbon dioxide equivalent for the entire forest area. The data obtained can serve as a basis for planning forest management, increasing the area's carbon sequestration potential by preventing forest destruction, reforestation with local species, and expanding green spaces. These efforts support Mahidol University, Nakhon Sawan Campus, in achieving net zero greenhouse gas emissions by 2030 and reducing the severity of global climate change.

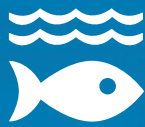


### *Project to Improve Drought Vulnerability Index and Develop Drought Forecast Index Using Satellite Data*

The Faculty of Environment and Resource Studies at Mahidol University has implemented a project to develop a drought monitoring and forecasting system using drought index derived from satellite data. This project can predict drought risk areas up to 3 months in advance, allowing for analysis, monitoring, and reporting of drought conditions. It supports relevant agencies in water management, mitigating damage to the agricultural sector and the public. Additionally, the project includes the development of a data display system to aid agencies in planning and managing water effectively, thus enhancing drought management capabilities.



14 LIFE  
BELOW WATER



216  
Researchers



64  
Research  
units



429  
Research  
output

**BoB  
WeT**  
The Bay of Bengal  
Wetland Partnership



Photo: The Bay of Bengal Wetland Partnership

# SDG 14

## LIFE BELOW WATER

*The Wetlands Management Research and Training Center (WMRTC)*



Photo: Ocala Magazine [<https://ocalamagazine.com/into-the-wetlands/>]

Established in 2005 by the Faculty of Environment and Resource Studies, the center focuses on research and training related to wetland conservation and management in Thailand and in the Asian region. Currently, the center is working on building a cooperative network for mangrove conservation and establishing a model area for the conservation of blue crabs and mud crabs in the Bay of Bengal. This initiative involves 8 countries: Sri Lanka, India, Bangladesh, Myanmar, Thailand, Malaysia, Singapore, and Indonesia. The Bay of Bengal Wetland Partnership (BoBWET) was formed in recognition of the global importance of this marine area, which is home to numerous significant marine species facing environmental and climate change challenges. The Wetlands Management Research and Training Center represents Thailand in this network and is responsible for selecting workshop areas for its members as follow:

- Model for coastal conservation, focusing on mangrove conservation.
- Establishment of a network for blue crab and mud crab banks in the Gulf of Thailand and the Andaman Sea.
- Promotion of cooperation for integrating sustainable wetland utilization in the Bay of Bengal region.
- Training, knowledge exchanging and imparting, and awareness raising and operating on responsible fisheries management using the Crab Bank method and mangrove planting.



### Mangrove Survivor Game

The Mangrove Survivor board game, developed from research, serves as a supplementary learning tool to educate on food chains, food webs, and various impacts on mangrove ecosystems. Learners will record their knowledge as follows:

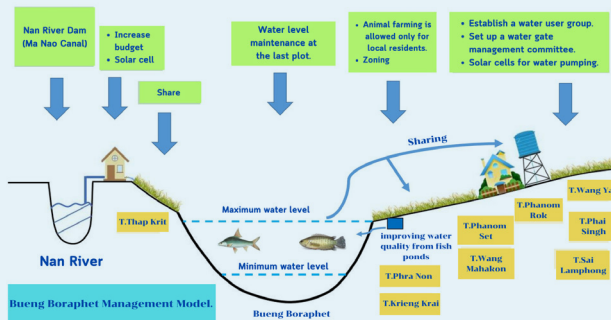


- Enhance knowledge and understanding of mangrove ecosystems.
- Illustrate relationships between living and non-living elements in the ecosystem.
- Promote awareness of mangrove ecosystem conservation.

Furthermore, the Mangrove Survivor board game serves as a learning model for master's and doctoral students in Science and Technology Education to develop educational innovations for continuous use. Since 2017, it has also been part of the "Open the World of Science and Innovation Project" by the Institute of Innovative Learning, engaging around 800 secondary and high school students from across the country.

### Participation in Water Management in the Bueng Boraphet Wetland Area

The Research and Academic Service Center under the Nakhon Sawan Campus Establishment Project at Mahidol University has developed a strategy to support Bueng Boraphet and encourage active local community participation. The center plays a vital role in managing water in the Bueng Boraphet wetlands—an internationally significant site and the largest freshwater wetland in Thailand, known for its rich biodiversity of flora, aquatic animals, and wildlife. Later, the area of the lake was encroached upon for various purposes. Additionally, the presence of many villagers living in the Bueng Boraphet area has led to overlapping land issues, especially regarding water use and competition, which have persisted since 2017. As a result, the environmental system has deteriorated to a critical level. In response, a strong network of cooperation has been formed, leading to sustainable learning and collaborative problem-solving. This collaboration has created a water management system in the Bueng Boraphet wetlands with participation from all sectors, using research to drive the implementation of the results into actual practices in the area. As a result, the following measures have been implemented:



- Water network data in Bueng Boraphet surveyed and verified jointly by the community.
- Water management model approved by the government and local communities around Bueng Boraphet.
- Establishment of water user organizations in 5 sub-districts around Bueng Boraphet, supported by the Water Resources Act of 2018.
- Water management system with structures at both local and government agency levels, with participation from all sectors in all committees.



### Riverine Plastic Monitoring

In 2019, UNEP agreed to measures aimed at reducing global plastic pollution and the flow of plastic waste into the oceans. With commitments from 180 countries, including Mekong River Commission (MRC) member states, the initiative primarily aims to reduce the use of single-use plastic products and includes monitoring water quality and plastic waste flow into the Mekong River. The first phase of the project promoted the “CounterMEASURE” initiative to combat marine plastic debris in Southeast Asia by organizing regional workshops, mapping plastic pollution in the Mekong Basin, and supporting pilot projects in 4 MRC member countries: Cambodia, Lao PDR, Thailand, and Vietnam. Additionally, the MRC and UNEP have agreed on several issues, including identifying sources of plastic waste and developing standardized methods for assessing and monitoring plastic waste in the Mekong River. A draft of standard methods for monitoring and inspection has been developed and tested using protocols to monitor plastic waste and microplastics in the lower Mekong River Basin in 4 countries: Laos, Vietnam, Thailand, and Cambodia. In Thailand, the study area is in Khong Chiam District, Ubon Ratchathani Province, which led to the development of a guidance on how to monitor plastic waste and microplastics in rivers. This also included training on “MRC Riverine Plastic Monitoring Protocols” to enhance the capacity of relevant officials from the 4 MRC member countries.



## 15 LIFE ON LAND



**240**  
Researchers



**60**  
Research units



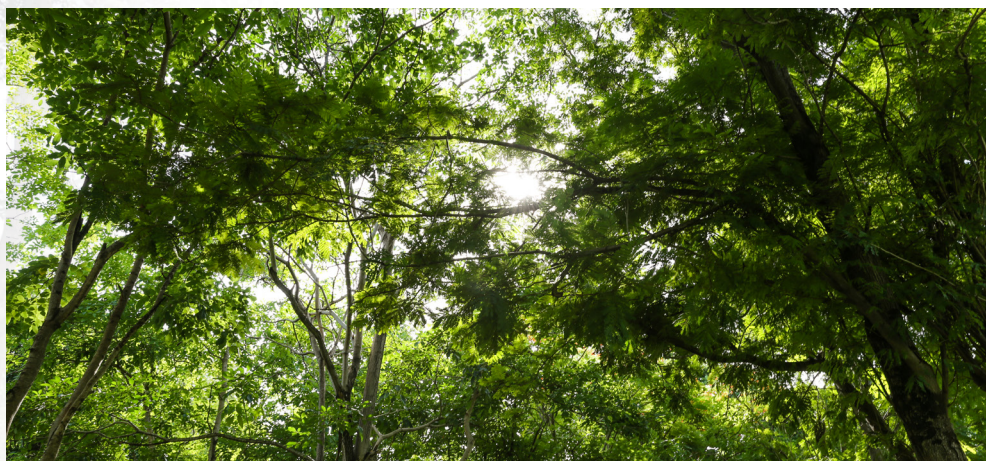
**397**  
Research output

# SDG 15

## LIFE ON LAND

### Green Area

The University has developed the areas according to the Mahidol University Master Plan 2008, which envisions creating a “Ideal University” that promotes “A Promise Place to Live and Learn with Nature.” The concept focuses on creating an environment suitable for living and learning, with physical features that harmonize with social and environmental conditions. The University has expanded this vision from a Green University concept, with a key strategy to promote green area and foster a Low Carbon Society. Currently, the University is advancing on sustainable development (Mahidol University Sustainability Action) in alignment with



the “Sustainable Development Goals: 17 SDGs” by setting a “Net Zero Emission” plan to reduce greenhouse gas emissions to net zero by 2030. This plan emphasizes maintaining and expanding green area both inside and outside of the buildings to absorb greenhouse gases. Therefore, clear definitions of environmental conservation area, green area, and development area have been established. Additionally, tree planting initiatives have been ongoing since 2010, including Peacock’s Crest trees, Spanish Cherry trees, Freshwater Mangrove trees, Rain trees, Pink Trumpet trees, Sathorn trees, Butterfly trees, Black Ebony trees, and Kaprichan trees, totaling 261 trees. Furthermore, the University preserves forested and green spaces across the Amnatcharoen, Nakhon Sawan, Kanchanaburi, and Salaya campuses, covering a total area of 11.65 square kilometers and comprising 81.13% of the total campus area.

### National Biobank of Thailand

The Project of Institute Establishment for Sireeruckhachati Nature Learning Park, Mahidol University, has been certified by BGCI as an international standard botanical garden. The project spans 140 rai of land and serves as an urban herbal forest, currently home to 1,965 perennial trees. Additionally, the project maintains a database of 923 species of living specimens (Living Collection) planted in the park, a database of propagated plant species, and a collection of 1,952 dried plant specimens (Herbarium Specimens) housed in the Mahidol University Plant Museum. Consequently, the project has been further developed to include a biological resource database



management system under the “Botanical Reference Center for Medicinal Plants and Medicament” to support the conservation of Thailand’s biodiversity. This effort is being conducted through a Memorandum of Understanding on Research and Development titled “Development of Sustainable Plant and Biological Resources Database Management and Dissemination System” in collaboration with the National Science and Technology Development Agency



(NSTDA) via the National Biobank of Thailand (NBT) under the Ministry of Higher Education, Science, Research, and Innovation (MHESI). These data links will be integrated with the National Biobank of Thailand to disseminate knowledge and support sustainable data utilization, establishing a comprehensive botanical, herbal, and medicinal reference center. The project also collaborates with various faculties at Mahidol University, including the Department of Pharmaceutical Botany at the Faculty of Pharmacy, the Department of Botany at the Faculty of Science, the Faculty of Environment and Resource Studies, and the Institute of Nutrition. Furthermore, a significant number of trees within Sireeruckhachati Nature Learning Park, which contribute to carbon storage and the reduction of global warming, play a key role in achieving Net Zero Emissions.



### *Conservation of Banteng in Salak Phra Wildlife Sanctuary*

The “Banteng” is a symbol of the forest’s richness and is classified as a “protected endangered species,” most commonly found in Huai Kha Khaeng Wildlife Sanctuary, Uthai Thani Province. However, at “Salak Phra,” Thailand’s first wildlife sanctuary, bantengs are now facing “extinction” due to changes in land utilization and illegal wildlife hunting. This has prompted the initiation of a banteng breeding program to restore their population in the wild. Leveraging the knowledge of Mahidol University’s research professors, led by the Faculty of Environment and Resource Studies, in collaboration with 35 community networks and relevant agencies, research efforts have been developed to breed bantengs and release them back into nature. “Animal cameras” are used to monitor natural breeding after their release. Currently, the number of released bantengs has grown from 19 to more than 28. Before their release, breeders are selected to remain in breeding programs to further increase their population for conservation. This project is supported by the World Wide Fund for Nature (WWF) and the Zoological Society of London-Thailand (ZSL), with parallel banteng research also



being conducted in Indonesia. Currently, bantengs remain classified as “protected wild animals,” with strict penalties for poaching. Therefore, it is essential to study the feasibility of proper management.

### *Preserve the Natural Heritage in Thungyai-Huai Kha Khaeng Wildlife Sanctuary*

The natural heritage site of Thungyai-Huai Kha Khaeng Wildlife Sanctuary, Thailand’s first natural site registered as a World Heritage Site, is also the first in Southeast Asia. This sanctuary is home to a wide variety of wildlife, including many rare, threatened, and endangered species. In response to these issues, the Faculty of Social Sciences and Humanities has launched a research project titled “Developing a Management Plan for the Natural World Heritage Site, Thungyai Huai Kha Khaeng Wildlife Sanctuary.” The project aims to analyze and synthesize basic data, assess the area’s potential, status, and limitations, and use these findings to develop an effective management plan. This effort aligns with the commitments of the Convention Concerning the Protection of the World Cultural and Natural Heritage, providing a framework, direction, and goals for the conservation and development of natural world heritage sites. Additionally, the project fosters an integrated participatory process with other government agencies and members to ensure that the sanctuary is managed in accordance with World Heritage Management Guidelines.

*Photo: Thailand Biodiversity Information Facility*

**16** PEACE, JUSTICE  
AND STRONG  
INSTITUTIONS



**275**  
Researchers



**82**  
Research  
units



**479**  
Research  
output

# SDG 16

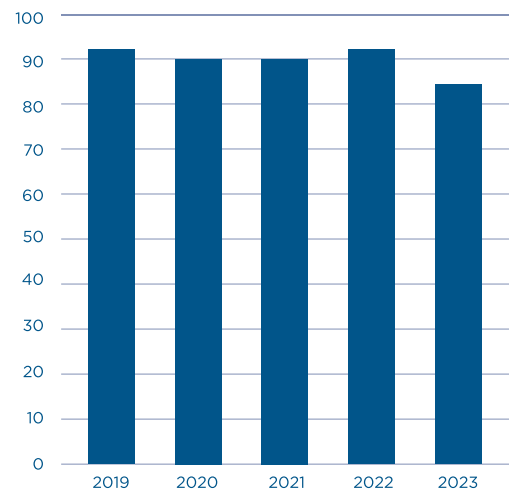
## PEACE, JUSTICE AND STRONG INSTITUTIONS

### Governance System

Mahidol University is committed to developing an efficient organizational management system in line with the principles of good governance. This system emphasizes integrity in operations, transparency, accountability, anti-corruption measures, and the promotion of an ethical organizational culture for the sustainable management of the institution. In 2023, the following actions were undertaken:

Policies	Integrity and Transparency Assessment (ITA)	Expand on the ITA	Monitoring	Evaluation
<ul style="list-style-type: none"> <li>Guidelines for Promoting Stakeholders Participation, 2022</li> <li>No Gift Policy, 2023</li> <li>Anti-Corruption Policy, 2023</li> </ul>	<ul style="list-style-type: none"> <li>Organized Internal Integrity and Transparency Assessment (IIT) activities to enable students and internal staff to participate in the University's development. More than 1,800 internal and external stakeholders have participated in the University's integrity and transparency efforts.</li> </ul>	<ul style="list-style-type: none"> <li>Expanded the ITA to various departments</li> <li>Organized the MU-ITA 2023 Clinic to provide advice and consultation on preparing public data. Conducted a full internal ITA assessment of 43 sectors, with 13 sectors receiving A-level awards (MU ITA Awards) for the first time.</li> </ul>	<ul style="list-style-type: none"> <li>Seminar workshop on implementing the strategy of good governance for development and exchanging knowledge on integrity and transparency from agencies with good practices, Mahidol University.</li> </ul>	<ul style="list-style-type: none"> <li>Integrity &amp; Transparency Assessment (ITA)               <ol style="list-style-type: none"> <li>Internal Integrity and Transparency Assessment (IIT)</li> <li>External Integrity and Transparency Assessment (EIT)</li> <li>Open Data Integrity and Transparency Assessment (OIT)</li> </ol> </li> </ul>

**The result of integrity and transparency assessment (ITA) in 2019-2023**



### SOME ONE : One of Many

The Research Institute for Languages and Cultures of Asia (RILCA) has fostered understanding of “difference” in Thailand’s pluralistic society through the documentary series “SOME ONE: One of Many,” developed based on the co-creation unit concept. This project collaborates with a private organization specializing in documentary production to promote peaceful coexistence in Thai society, emphasizing on unity in diversity—acknowledging differences without separation. “SOME ONE: One of Many” series consists of 45 episodes and aims to deepen understanding of individuals, communities, and societies beyond conventional social frameworks through the concept of “Pluralism.” This concept embraces societal diversity,



**SOME ONE**  
หนึ่งในหลาย

shedding light to roles that are often “neglected” or “abused” at both individual and societal levels. The series seeks to raise awareness, respect, and acceptance of the rights and dignity of people from various cultural groups, fostering tolerance and open-mindedness that will lead to a sustainable peaceful society. It also organizes forums for sharing experiences and reflecting on feedback for advancing a pluralistic Thai society.

### Human Rights Studies in Southeast Asia

The Project for Establishing the Institute for Human Rights and Peace Studies aims to promote human rights and peace studies in Southeast Asia, ensuring the sustainability of these efforts in a locally relevant context. The project currently serves as the Chair of the ASEAN University Network - Human Rights Studies (AUN-HRE) and the Secretariat of the Strengthening Human Rights and Peace Research and Education in ASEAN/SEA Programme (SHAPE SEA). In 2023, the following actions have been taken:

- Organized a regional youth training and seminar on “The ASEAN Youth Initiative Empowerment 2023,” with more than 253 participants from 20 countries within and outside of the ASEAN region.
- Granted research scholarships on “Elevating Research through and for Human Rights and Peace,” resulting in 15 research projects.
- Developed regional policy proposals for the AUN-HRE project in collaboration with the ASEAN Intergovernmental Commission on Human Rights (AICHR).
- Conducted a Human Rights Fundamental Certificate Course to support and promote human rights education for individuals, youth, and interested parties in Myanmar, with over 200 participants. Created an online human rights library database (Online Library Webpage).



### Peace in the Southern Border

The issue of peace in the southern border provinces has been a longstanding concern. The Project for Establishing the Institute for Human Rights and Peace Studies has thus played a key role in promoting peace in the southern border provinces. This is achieved by creating a common space for discussion and collaboration, particularly with members of the House of Representatives and politicians from 5 political parties. Such efforts highlight a mechanism that can sustain peace if there are clear and transparent working topics and processes for resolving southern border issues through parliament, supported by continuous and effective actions. The project has analyzed the study results and prepared proposals for the 4<sup>th</sup> Pa(t)tani Peace Assembly 2023 as follows:



Listening to the public opinions, developing and advocating proposals, providing education, coordinating at the local level, and offering humanitarian assistance.

Representing the voice of the people, adhering to the party's policies, providing knowledge and solutions to issue.

Justice and human rights processes, peace dialogue processes, social communication, and the development of the quality of life for local communities.

There is currently no concrete cooperation mechanism in place; however, some guidelines for collaboration have been established.

## 17 PARTNERSHIPS FOR THE GOALS



**2,406**  
Researchers



**197**  
Research units



**6,681**  
Research output

# SDG 17

## PARTNERSHIPS FOR THE GOALS

### MoU / MoA

Mahidol University has entered into numerous academic Memorandums of Understanding (MOUs) to facilitate teaching, research, technology transfer, academic services, cultural and artistic exchanges, and/or other academic activities with both bilateral and multilateral educational institutions, agencies, and international organizations. These MOUs are actively implemented through cooperation among various faculties, departments, and research centers. Additionally, Mahidol University continues to advance its academic achievements with support from both public and private sectors. Currently, there are a total of 524 Memorandums of Understanding.

### Number of MoU/MoA Mahidol University with partners between 2021-2023

Partner	Number of MoU/MoA		
	2021	2022	2023
International Institute	10	29	67
NGOs	12	-	-
Private Sector	49	10	10
Public Sector	109	26	11

*Note: International Institute is international academic institutes, public and private international organization*

*NGOs is non-governmental organizations*

*Private sector is private companies, private universities, and private schools*

*Public Sector is government units, public universities, and public schools*

### APAIE 2023 Conference and Exhibition

Mahidol University hosted the APAIE 2023 Conference and Exhibition under the theme of "Towards a Sustainable Future for International Education in the Asia Pacific" in collaboration with Chulalongkorn University, Thammasat University, Kasetsart University, Prince of Songkla University, Chiang Mai University, King Mongkut's Institute of Technology Ladkrabang, and King Mongkut's University of Technology Thonburi from March 13-17, 2023. The event featured workshops, academic presentations, educational exhibitions, and networking sessions. During the conference, the University participated in seminars on "Sustainability in Higher Education across the Asia Pacific" and "How International Education Supports University's Ranking" to exchange knowledge on the advancement and innovation of higher education, while also promoting academic cooperation between higher education institutions and the private sector, with participants from numerous countries worldwide.



**APAIE 2023 Bangkok**  
13-17 March 2023

*Photo: Telecom SudParis*



## Policy Advocacy 2023

Social Engagement Policies aim to promote national and international health policy leadership by creating a system to drive and support Policy Advocacy, using research results from Mahidol University in various fields to maximize their benefits and further develop them into national policies. These actions will provide social guidance and contribute to the achievement of the Sustainable Development Goals (SDGs), with 5 research projects receiving funding, namely:

- Project 1: Development of a Health-Impact Air Quality Index for the Bangkok Area
- Project 2: Mechanism for Developing Social Employment System for People with Disabilities in Community Hospitals
- Project 3: Interfaith Friendships and Sustainable Peacebuilding in Grassroots Communities
- Project 4: Policy Plan for Sustainable Agricultural and Environmental Management Based on a Community Agroforestry System
- Project 5: "MU MyMind": Promoting Mental Health in Adolescents—From Research to Policy and Practice



## Decade of Quality Fair: Towards Sustainable Development Goals (SDGs)

Mahidol Quality Fair 2023, hosted under the theme of "Decade of Quality Fair: Towards Sustainable Development Goals (SDGs)," provided a platform for Mahidol University staff to exchange knowledge on improving work quality and creating innovations in various areas at both the individual and organizational levels. The event encouraged the sharing of good practices. Mahidol University staff submitted 413 works from 21 faculties to be presented, along with 7 exhibitions related to SDGs, including the Recycle Bank, Flexible Benefit, Less Salt - Reduce Disease, Workplace Safety, AUN-Health Promotion Network, Some One: One of Many, and the promotion of participatory water management systems in the Bueng Boraphet wetlands.



## SDGs + Mobility MaPs 2023

To exchange knowledge on foreign cultures and to collaborate in driving the concept of creating sustainable change in line with the Sustainable Development Goals (SDGs), Mahidol University has partnered with universities from ASEAN member countries, including Airlangga University (UNAIR) in the Republic of Indonesia, Can Tho University in the Socialist Republic of Vietnam, National University of Singapore in the Republic of Singapore, and Singapore University of Technology and Design (SUTD) in the Republic of Singapore.

**PARTNERS**

**ACHIEVEMENT**

**100 Participants**

**MU Undergraduate students**  
From 14 MU Affiliates

**9 Faculties** – NS, PY, RA, SC, EG, PH, EN, SI, LA  
**2 Colleges** – MUIC and CR  
**3 Regional Campuses** – MUAM, MUKA and MUNA

**4 Batches**  
**3 Countries**

**Indonesia Vietnam Singapore**

# PUBLICATION AND DISTRIBUTION

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**12** RESPONSIBLE  
CONSUMPTION  
AND PRODUCTION



การผลิตและบริโภคที่ยั่งยืน

**13** CLIMATE  
ACTION

การรับมือการเปลี่ยนแปลง  
สภาพภูมิอากาศ  
และผลกระทบที่เกิดขึ้น



**16** PEACE, JUSTICE  
AND STRONG INSTITUTIONS

สังคมสงบสุข  
ยุติธรรมไม่แบ่งแยก



**14** LIFE  
BELOW WATER

การใช้ประโยชน์  
จากมหาสมุทร  
และทรัพยากรทางทะเล  
อย่างยั่งยืน



**15** LIFE  
ON LAND

การใช้ประโยชน์  
จากระบบนิเวศ  
ทางบก  
อย่างยั่งยืน



**17** PARTNERSHIPS  
FOR THE GOALS

ความร่วมมือ  
เพื่อการพัฒนาที่ยั่งยืน



