



Mahidol University  
sustainability



# MAHIDOL UNIVERSITY SUSTAINABILITY REPORT



# 2021



# TABLE OF CONTENTS

<b>ABOUT THIS REPORT</b>	<b>2</b>
APPROACH TO SUSTAINABILITY	4
<b>SUSTAINABLE SOCIETY</b>	<b>6</b>
SDG1: NO POVERTY	7
SDG2: ZERO HUNGER	8
SDG3: GOOD HEALTH AND WELL-BEING	8
SDG4: QUALITY EDUCATION	11
SDG5: GENDER EQUALITY	17
<b>SUSTAINABLE GROWTH</b>	<b>18</b>
SDG7: AFFORDABLE AND CLEAN ENERGY	19
SDG8: DECENT WORK AND ECONOMIC GROWTH	20
SDG9: INDUSTRY, INNOVATION AND INFRASTRUCTURE	20
SDG10: REDUCED INEQUALITIES	23
SDG11: SUSTAINABLE CITIES AND COMMUNITIES	24
<b>SUSTAINABLE RESOURCE</b>	<b>27</b>
SDG6: CLEAN WATER AND SANITATION	28
SDG12: RESPONSIBLE CONSUMPTION AND PRODUCTION	29
SDG13: CLIMATE ACTION	32
SDG14: LIFE BELOW WATER	32
SDG15: LIFE ON LAND	33
<b>PEACE</b>	<b>36</b>
SDG16: PEACE, JUSTICE AND STRONG INSTITUTION	37
<b>COLLABORATION</b>	<b>41</b>
SDG17: PARTNERSHIP	42



# ABOUT THIS REPORT

The latest version of the annual report on sustainable development at Mahidol University, Sustainability Report 2021, emphasizes our adding value to the key debates and policy initiatives in the context of three overarching aims towards sustainable development, namely (i) sustainable growth, (ii) sustainable resource, and (iii) sustainable society in order to present our implementation of Sustainable Development Goals (SDGs). This report presents the University's overall impact and its operation to support achievement of the United Nations Agenda 2030 and the SDGs, showing the annual sustainability performance, from October 1, 2019 to September 30, 2020. It provides follow-up updates from previous report published in 2020 in order to inform stakeholders who have interests in our sustainability performance, including faculty members, students, staffs, suppliers, alumni, governments, industry, local communities, as well as prospective students. The report outlines the sustainable growth on research and education which target students and staffs as well as interested persons through either classroom or online lessons aiming at an Inclusive University for all. Then the transformation of knowledge and innovation are reported. The organizational governance is explained with the progressive work and its management. Our activities' impact on environment and resource, as well as eco-efficiency and circular economy were recognized in the scope of sustainable resource. Last but not least, the University's activities responding to challenge of social issues are highlighted in the concept of sustainable society.

The Sustainability Report is a mechanism for annual public reporting on the University progress. This report is in the English language, and it can be downloaded from the Mahidol University website.



# HIGHLIGHTS



**28,764** MU staffs  
(7.3% recruitment rate  
and 4.5% turnover rate)



**22.37%**  
GHG reduction  
in Salaya campus



**3.77%** reduced  
water consumption



**27,921** of MU students  
(36.3% Male, 63.7% Female)



**69%** of procurement  
budget committed to  
green procurement



**100%** recyclable  
treated wastewater  
in Salaya campus



**1,840** publications out  
of 3,690 total publications  
relating to the achievement  
of 17 SDGs



**78.73%**  
of total building in  
Salaya camous considered  
as a smart building



**47.88%**  
of recycled waste



**(A) Rating**  
of Thailand's Integrity and  
Transparency Assessment



**57**  
MoU/MoA collaboration



**Zero**  
accident occurrence

## Highlight Goals by 2030



Increase number of MU graduates with effective and technical skills would be promptly employed



Eliminate all obstacles in education and ensure that everyone has equal access to education at all levels



Ensure that all of students can acquire knowledge and skills contributing to sustainable development: education, lifestyle, humanity, equality, peaceful, cultural and traditional conservation



Provide more scholarships for students who come from other developing countries to access higher education, specialization training, as well as science and technology



Establish teacher trainings in developing countries to increase number of potential teachers



Transform to net zero greenhouse gas emission campus by 2030

# 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.



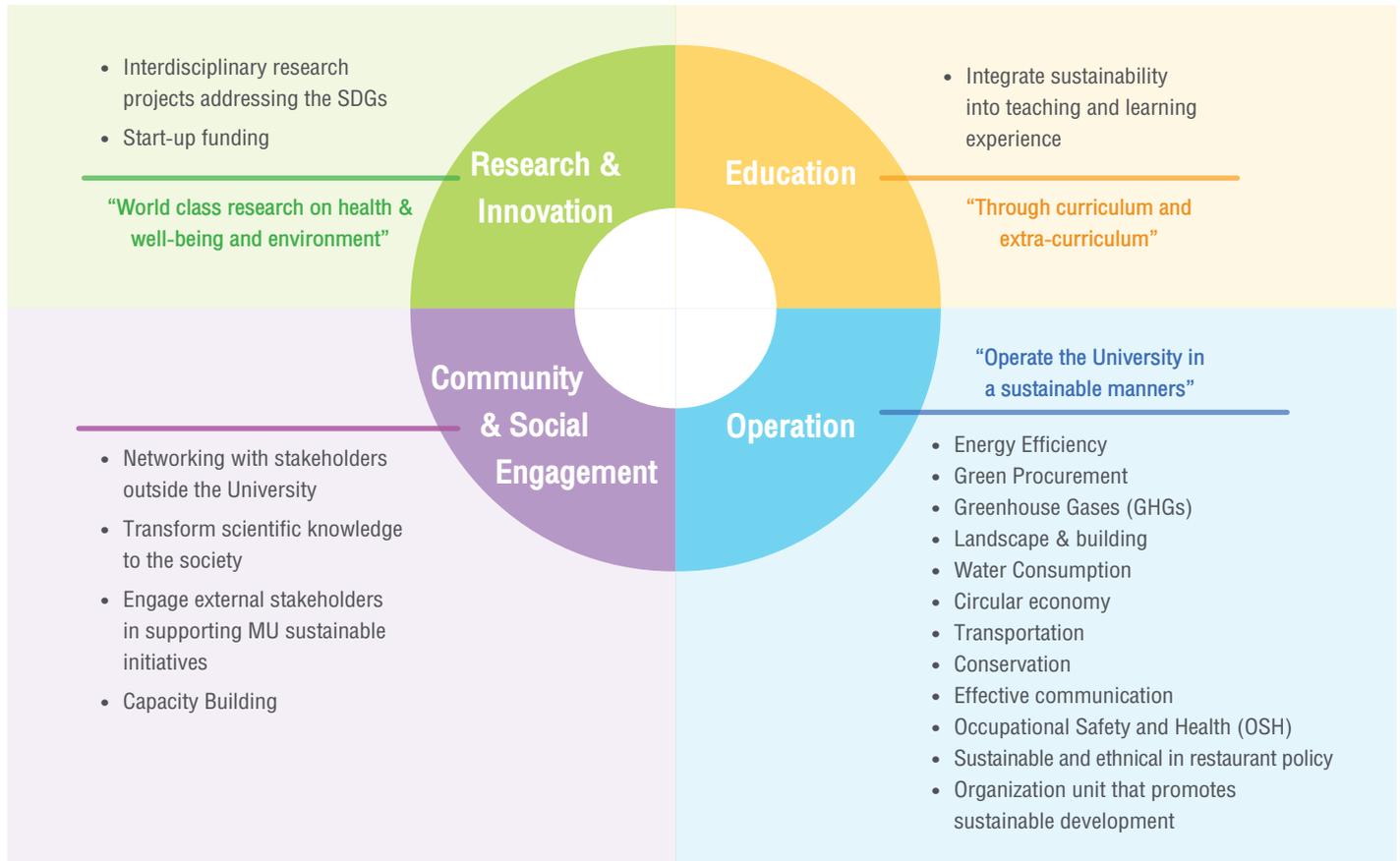
In this report, our active sustainability performance was demonstrated against a broad spectrum of aspects, according to the Mahidol University Sustainability Strategy.

## 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;



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.



## Mahidol University in the World University Rankings

Rankings	World	Thailand
THE WORLD UNIVERSITY RANKINGS	601-800	1
QS WORLD UNIVERSITY RANKINGS	314	2
By subject: Life Science and Medicine	143	1
By subject: Pharmacy and Pharmacology	101-150	1
ACADEMIC RANKING OF WORLD UNIVERSITIES	401-500	1
CWTS Meaningful metrics Leiden Ranking	412	1
RUR	399	1

Rankings	World	Thailand
SCIMAGO INSTITUTIONS RANKINGS	359	1
BEST COLLEGES USNews	511	1
NTU RANKING	495	1
Webometrics RANKING WEB OF UNIVERSITIES	594	2
UiGreenMetric World University Rankings	62	1



# SUSTAINABLE



# SOCIETY



# Sustainable Society



This strategy reflects the element of “People” in 5P concept. 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.” SDG-related People includes as shown in the following.

- SDG1: No poverty
- SDG2: Zero hunger
- SDG3: Good health and well-being
- SDG4: Quality education
- SDG5: Gender equality

Activities that contribute to sustainable society are summarized below.

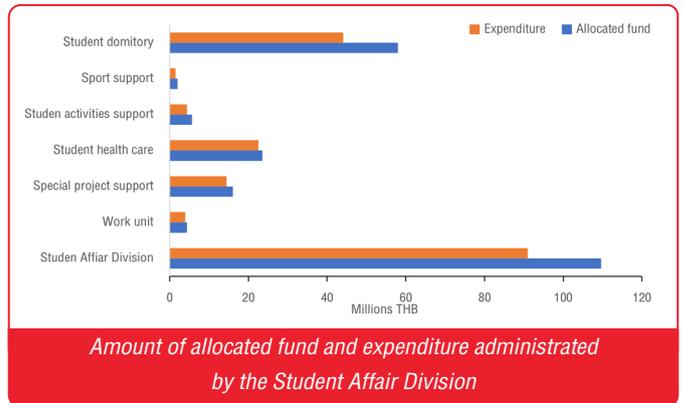
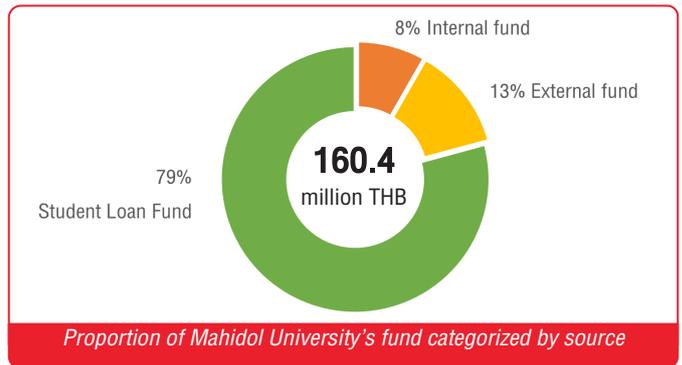
## Financial support

Mahidol University is keen to minimize student’s obstacles under financial limitation that ensure a quality basic supply for our students. We initiated the acquisition scholarships from three main sources.

1. Internal fund supported by the Division of Student Affairs
2. External fund donated by other organizations (such as government and private agencies, NGOs, and public donors)
3. Student Loan Fund supported by the Thai government and private companies for students who cannot afford the living expenses as well as educational cost.

As worst case, ‘University emergency fund’ will provide 500 to 5,000 THB budget per one student who are in emergency situation. The financial support for financially needy students, including student who fall into the bottom 20% of household income group in the country, was distributed through establishment of 1,736 scholarships under MU Financial Aid and Scholarship operation. Student can find the available scholarship through our website information.

In 2020, our official budget was over 160.4 million THB: 13.2 million THB supported by our internal funding, 20.1 million THB supported by external funding, and 127.1 million THB provided under the Student Loan Fund was allocated to 2,959 students.



As we further concern the education obstacle of disabled persons that they are facing, we provide financial aid of approximately 670,000 THB for 15 of 44 disability students enabling equitable access to university educational systems. To be the inclusive University for all, Mahidol University open up for all people to access education equitably. We remain supporting all of our disability students, as same as different religions, countries, genders, and tribes to be a part of sustainable society.

## Mahidol Together We Share project

To support people who are affected by COVID-19 situation, “Mahidol Together We Share project” was implemented by the group of Pay It Forward Thailand which is joined by 10 food stores around Salaya campus. Local people and others can receive free food in the participating shops nearby.





## Agritech and Innovation Center (AIC)

The Ministry of Agriculture and Cooperatives has signed MoU with Mahidol University to establish Agritech and Innovation Center (AIC). The Center has been officially operated on 5 March 2020 in Kanchanaburi campus and Amnat Charoen campus. The objective of this center is for improvement of competitiveness potential of the country's agriculture with improved technology and innovation enhancing development of smart farmer as well as young smart farmer in every province across Thailand.



## Master Science program in food resources and ecosystem sustainability

The 'Food Resources and Ecosystem Sustainability' program is a multidisciplinary program, organized by Kanchanaburi campus, in the fields of agricultural innovation, food technology, biodiversity conservation, and public policy. The graduates from this program are the persons with both in-depth knowledge in sustainability related fields of expertise, including agricultural innovation, food technology, biodiversity conservation, and industry-specific fields, and broad knowledge in other related scientific areas in order to integrate various ideas, knowledge and sciences to find sustainable alternatives for problems solving related to food resources and ecosystem sustainability. Furthermore, two Bachelor of Science programs: Agricultural Science and Food Technology have been organizing for the perspective students who are expected to be the part of sustainable food production systems. These programs were subsidized to implement resilient not only agricultural productivity, but increase the investment in food security and agricultural productive capacity through enhanced smart farmer, agricultural research and technology development.

## Bachelor of Science program (SMART Farmer)

The program in Nakhon Sawan campus was established in response to Thai government's needs for Thailand 4.0, value-based economy and country's economy driven by innovation and creativity. The goal aims at transforming a traditional agriculture into Agriculture 4.0 emphasizing on smart farming with support of good management and selection of appropriate technology. Also, the program creates an agriculturalist with entrepreneurship in mind.

In 2020, the program cooperated with Syngenta Crop Protection company to launch "Bee love project" with objective to develop the area of the campus approximately 20 Rai or 32,000 m<sup>2</sup> into learning area to cultivate understanding on bee conservation. Importantly, the project was closely worked with students and surrounding communities in order to create suitable bee habitat, and the products from the project can lead to increased income of local communities.



## Operations in response to COVID-19 situation COVID-19 Screening and Hospitality Treatment

In responding to the COVID-19 situation, Mahidol University has participated in many activities which contribute to all people's health and well-being. By well-equipment and expertise, the supporting clinical screening system was specially provided for COVID-19 in our 7 work units such as Siriraj Hospital,



Golden Jubilee Medical Center and Chakri Naruebodindra. At least 360 beds and 80 negative pressure rooms are provided for caring of COVID-19 patients.

## COVID-19 Proactive Screening in Rural Area

As we concern all lives matter, the Faculty of Medical Technology collaborates with the government to support COVID-19 proactive screening program for homeless people



in many areas in Pathumthani, Nonthaburi, and Nakhon Pathom provinces by Nasopharyngeal swab and throat swab to investigate the COVID-19 infection.

## Quality of Life Improvement



The project on Quality-of-Life Improvement is carried out in Pho Thong Community, Nakhon Pathom province. Poor people, especially the vulnerable group of children, bedridden, and non-income patient were urgently assisted. Our support includes short- and long-term caring by our staff. The short-term caring is the donation of essential utilities such as infant milk, mattress pads, medical supplies, etc. While, continued monitoring and services were added for long-term caring cases. The basic information, health status, and requirement of participated people will be collected and evaluated to be the local well-being people database.

## Integrated Center of Excellence (SiCOE)

Siriraj Integrated Center of Excellence (SiCOE) operated by Siriraj Hospital is a medical service hub for specific groups of patients in terms of diseases or procedures. By collaboration of multidisciplinary experts, SiCOE provides adequate treatments and service to patients who are facing specific diseases. In 2020, the Siriraj Integrated Center of Excellence Sustainable Excellence (SiCOE-SET) was established under approval of the Faculty Committee Resolution No. 23/2563 aiming to support the operation of COE, as well as to upgrade the efficiency of Siriraj Hospital's Center of Excellence (COE). Initially, the SiCOE consists of 15 COEs, as follows:



- Siriraj Diabetes Center of Excellence: SiDM
- Siriraj Emergency Medical Services: SiEMS
- Siriraj Fetal Therapy Center: SiFTC
- Siriraj Hip and Knee Joint Replacement Excellent Center: Si ELITE
- Siriraj Excellence Center for Inherited Metabolic Diseases and Newborn Screening: SiIMD & NBS
- Siriraj Center of Interventional Radiology: SiCIR
- Siriraj Liver Transplant Center: SiLTx
- Siriraj Center of Neuromuscular Disease: SiNMD
- Siriraj Skin Laser Center: SiSL
- Siriraj Stroke Center: SiStroke
- Siriraj Thalassemia Center: SiTH
- Siriraj Transcatheter Heart Intervention and Surgery: SiTHIS
- Siriraj Urticaria and Angioedema Center: SiUAC
- Siriraj Vascular Center: SiVasC
- Siriraj Vision Rehabilitation Center & Holistic Care: SiVRC

These COEs provide healthcare services which the patients will obtain excellent and accessible services through all health care coverages. Thai society will obtain accurate and reliable medical knowledge, and there will be various and distinctive bodies of knowledge from other national and international centers of excellence in aspects of services, research and development, and academic excellence. To support and drive the SiCOE-SET team, four essential principles are determined to be the main roles:



1. **Creating:** Aims to develop SiCOE into an excellence center by applying Malcolm Baldrige Management Framework for each center including strategy, customer focus, and means to develop.
2. **Sustainability:** Aims to support centers of excellence create sustainable approaches to systematic work process due to long-term plan setting, sustainable service providing, and adaptable changing in Thai and global societies.
3. **Excellence:** Aims to integrate the three missions of the Faculty of Medicine Siriraj Hospital: medical services, academic education, research and innovation to support and contribute to the SiCOE to be a distinguishing center of excellence and high efficiency prototype.
4. **Together:** Aims to work in coordination among centers of excellence and SiCOE-SET team in order to implement multiple aspects and strategic development, workshops arrangement, as well as coordination with other departments.

The SiCOE-SET team continuously remains the value of “Creating”, “Sustainability”, “Excellence”, and “Together” to be the organization’s culture. Also, in purpose of achievement on the service efficiency. The SiCOE service has been implemented by adaptive management such as via the workshop on SWOT analysis for analyzing mutual strength, weaknesses, opportunities and threatens among centers of excellence in order to initiate brainstorming for the first step of further development. Besides, the brainstorming, either in focus group or officially summit, was organized for analyzing and strategy-making every 3-5 years. Moreover, the SiCOE-SET progressive working is updated and recorded weekly. To maximize benefit for all people, SiCOE is driven to be the intellectual medical center which can be a role model for occasional health service and implementing towards SDG3: Good Health and Well-Being.

## Siriraj Genomics center

By collaboration of researcher teams and Genomics Thailand organization, Siriraj Genomics Center was established to coordinate and drive the genomic and precision medicines' research, service, data management, political and ethical aspects in Thailand. The next generation sequencing (NGS) and targeted therapy are integrated in operation of the Siriraj Center of Research Excellence: SiCORE Precision Medicine and SiCORE Systems Pharmacology (SiSP).



## Siriraj Mobile Stroke Unit

The Siriraj Mobile Stroke Unit was established by cooperation between Siriraj Stroke Center and Faculty of Engineering to implement the remote stroke diagnosis and healthcare service in rural areas. With the 4G digital technology available for brain scanning and 4G remote communication, the doctor could be rapidly diagnosed and promptly provide primary treatment for patients who live in the remote areas. In 2020, higher digital technology and 5G network were adopted



to service for local people in the Eastern Economic Corridor and surrounding area. By 2028, this project is expected to be the applicable model for Thailand's emergency medicine.

## Policy on development of National Health Insurance

Based on the study of opportunity and limitation of participating arrangement of medical services by the disability service center recommended by Rachasuda college, the National Health Security Office (NHSO) determined the role of disability service center which provide health and performance of disabilities services to be the joint health care service where can provide the wider service under national insurance coverage.

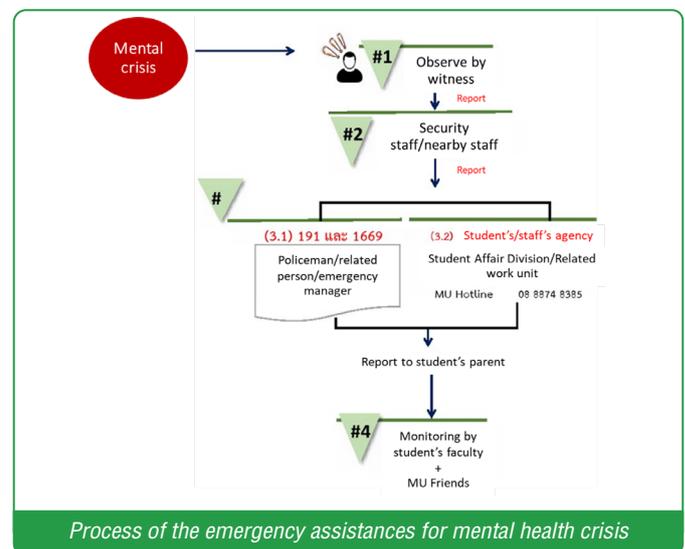
## Measurement of health protection for medical staff and patient in hospital

Based on the publication of Prof. Worapong Manuskiatti, COVID-19 in dermatology practice: getting back on track , the practical measurement was applied in the medical services in order to protect the COVID-19 infection of the medical staff and patient.

## Healthcare services

Mahidol University has the capacity to provide professional medical treatment for our students, staff, and other people. For our students and staff, we have provided the health care service under Rule and procedure of Mahidol University student health care service and allowance disbursement B.E.2559. Our students and staff can access by using student/staff ID (either virtual ID card or Mahidol application), Thai citizen ID card, and passport in all of Mahidol University's medical units. The student will receive healthcare benefits covered by 30,000 THB per year. In case of international student, the student will be provided the health insurance at least 30,000 THB per IPD or 1,000 THB per OPD for undergraduate student, and 20,000 THB per IPD or 500 THB per OPD for graduate student. For all of MU staff, Mahidol University also provides annual health checkup program to maintain their health and occupational safety. In 2020, 24,879 staff (86.5% of all staff) have participated in the annual health check. In addition, we have also organized many health promotion activities and facilities, for instance The HERO: No smoking program participated by 20 staff. However, under situation of COVID-19 pandemic, the health facilities namely running event, exercise campaign, and fitness rooms were restricted.

## Mental health assistance



Process of the emergency assistances for mental health crisis

As we are certainly concerned that mental health crisis will critically affect our people, Mahidol University provides the emergency plan for our students and staff who are facing mental problem such as hallucination, delusion, abnormal expression, and depression. We have provided available mental health care and counseling services through many channels including MU Friends, Adolescent Clinic, MU Hotline, Wall of share, and all of our hospital and medical centers. Moreover, external centers such as Ministry of Public Health and Samaritans Thailand were also suggested for our people through our website .



## Progress and continuation of education

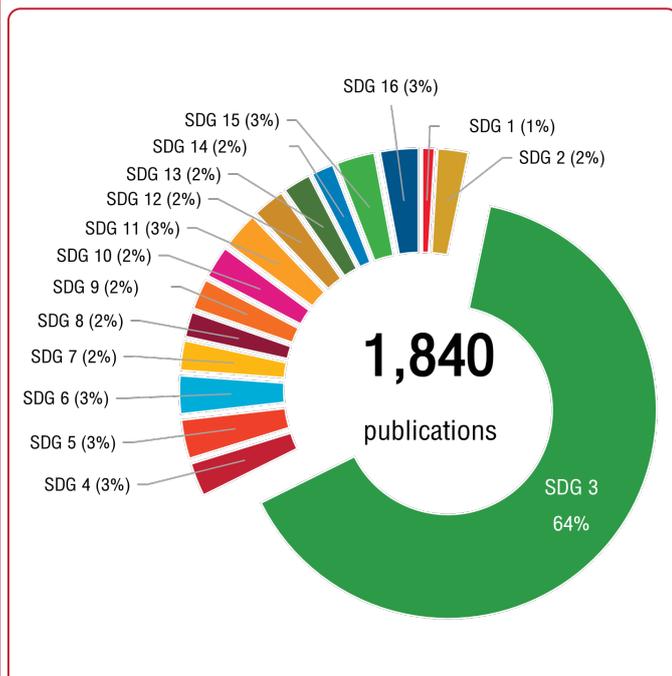
As we concern that students are essential contributors to the knowledgeable life of the community, Mahidol’s graduates are required to possess profound knowledge in specific fields, creativity, social awareness and readiness to the forceful negotiation and discussion about thoughts, and willing to engagement with communities in the changing world. We create study programs based on foundation of expertise, using active project-based learning and practical projects to implement the students’ intellectual and achievement in their career and daily life. More than academic knowledge, we support our students to work, integrate learning with local and international enterprises through multidisciplinary programs. All of our students can variably join into their interesting fields and acquire the skills to pursue their future careers as well as exposing them to a wide range of issues and evolving the interdisciplinary curiosity through our providing international accreditation 37 of 86 programs from 22 faculties of Mahidol University, in academic year of 2020.



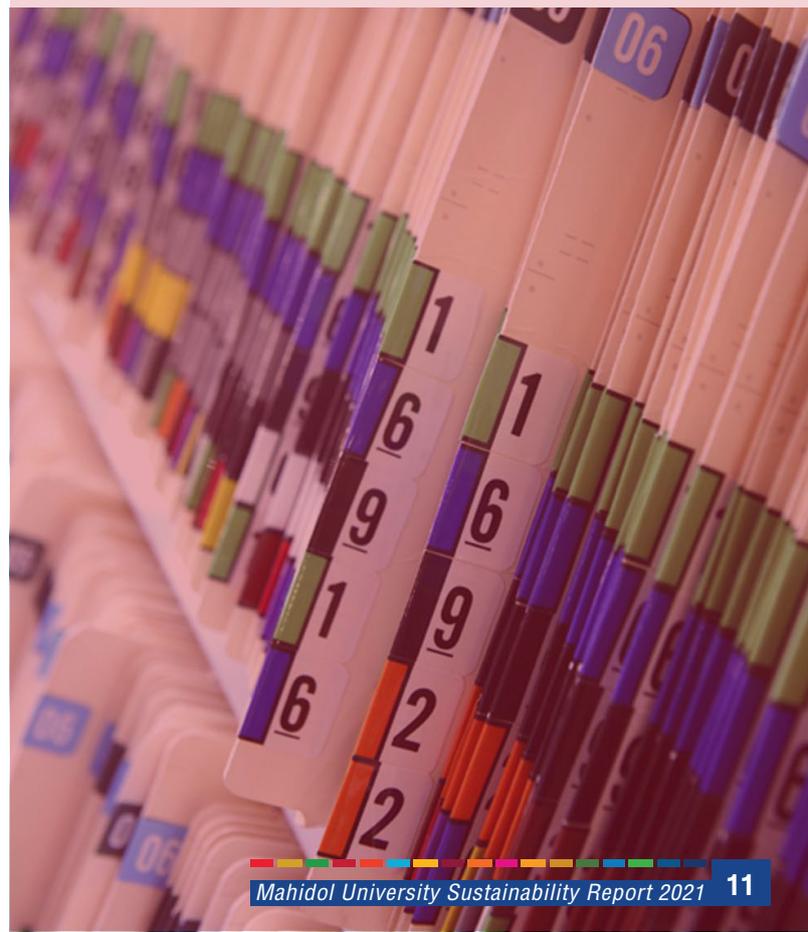
Mahidol university has been implementing quality curriculum at both national and international standards. In 2020, our courses: 20 bachelor programs, 12 master programs and 5 Ph.D programs were internationally approved by AUN-QA and other standards as shown in the following table.

## Mahidol University publication related to SDGs

Mahidol University recognizes the importance of sustainable development that contributes to be sustainable future; we promote all people to contribute to the creation of a sustainable society through their research and academic activities. Currently, Mahidol University has generated totally 4,942 subjects and 8,254 publications related to the UN SDGs, of which 4,368 publications available on the Open Access database. In 2020, approximately 1,485 million THB was allocated for research in the theme of environment and sustainability which are related to keywords such as: forest, animal, nature, water, plant, environment, resource, energy, atmosphere, renewable, community, society, economic, river, genetics, and herb. There are 121 projects that relate to social development and 34 community’s collaborated projects linked to the local development. The 1,840 publications of our research topics relating to the achievement of 17 SDGs. Based on Google Scholar search engine; the total of 1,600 publications were linked to “Green”, “Environment”, “Sustainability”, “Renewable Energy”, and “Climate Change”. Major publications were obviously related to SDG3: Good Health and Wellbeing (1,185 publications, 64%). More publications and academic activities related to other SDGs were expected to be implemented in the near future.



Proportion of Mahidol University publication related to each SDG



## List of certificated courses under evaluation by international standards

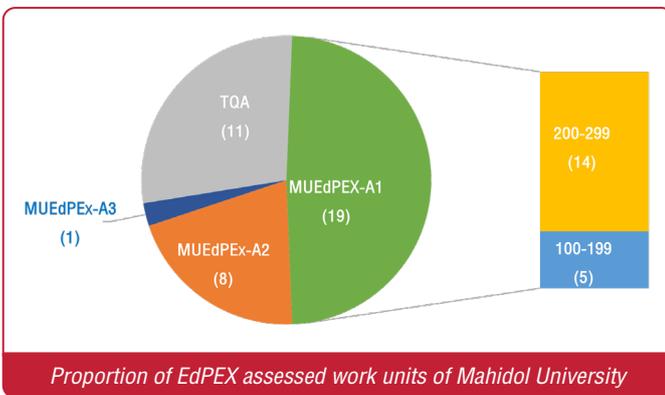
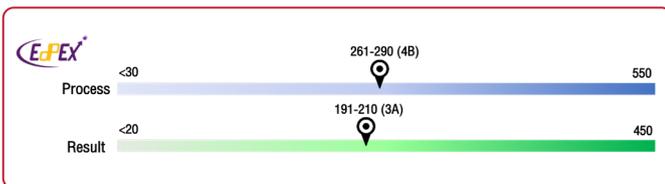
Certificated courses	
AACSB	<p>College of Management</p> <p>Master of Management Program (International and national programs)</p> <p>Master of Management Program (International program)</p> <p>Doctor of Philosophy Program in Management (International program)</p> <p>Doctor of Philosophy Program in Sustainable Leadership (International Program)</p> <p>Mahidol University International College</p> <p>Bachelor of Business Administration Program in Finance (International program)</p> <p>Bachelor of Business Administration Program in International Business (International program)</p> <p>Bachelor of Business Administration Program in Marketing (International program)</p> <p>Bachelor of Business Administration Program in Business Economics (International program)</p> <p>Master of Business Administration Program (International program)</p>
APACPH	<p>Faculty of Public Health</p> <p>Master of Public Health Program (International Program)</p>
AUN-QA	<p>Faculty of Medicine Siriraj Hospital</p> <p>Bachelor of Applied Thai Traditional Medicine Program</p> <p>Bachelor of Technology Program in Medical Educational Technology</p> <p>Master of Science Program in Anatomy</p> <p>Master of Science Program in Immunology (International program)</p> <p>Faculty of Medicine Ramathibodi Hospital</p> <p>Bachelor of Nursing Science Program, Ramathibodi School of Nursing</p> <p>Doctor of Philosophy Program in Clinical Epidemiology (International program)</p> <p>Mahidol University International College</p> <p>Bachelor of Business Administration Program in International Hospitality Management (International Program)</p> <p>Doctor of Philosophy Program in Physical Therapy (International Program)</p> <p>Bachelor of Science Program in Occupational Therapy</p> <p>Faculty of Information and Communication Technology</p> <p>Bachelor of Science Program in Information and Communication Technology (International Program)</p> <p>Faculty of Nursing</p> <p>Bachelor of Nursing Science Program</p> <p>Faculty of Science</p> <p>Doctor of Philosophy Program in Biochemistry (International Program)</p> <p>Faculty of Tropical Medicine</p> <p>Master of Clinical Tropical Medicine (International Program)</p> <p>Faculty of Public Health</p> <p>Master of Public Health Program (International Program)</p> <p>Ratchasuda College</p> <p>Master of Arts Program in Rehabilitation Science for Persons with Disabilities</p> <p>Faculty of Dentistry</p> <p>Doctor of Dental Surgery Program</p> <p>Faculty of Medical Technology</p> <p>Bachelor of Science Program in Radiological Technology</p> <p>Faculty of Pharmacy</p> <p>Master of Science Program in Social, Economic and Administrative Pharmacy (International Program)</p> <p>Master of Science in Pharmacy Program in Clinical Pharmacy (International Program)</p>
IFoA	<p>Faculty of Science</p> <p>Bachelor of Science Program in Actuarial Science (International Program)</p>
ISPO	<p>Faculty of Medicine Siriraj Hospital</p> <p>Bachelor of Science Program in Prosthetics and Orthotics</p> <p>Bachelor of Science Program in Prosthetics and Orthotics (International Program)</p> <p>Bachelor of Prosthetics and Orthotics Program (Blended Distance Learning International Program)</p>
MusiQuE	<p>College of Music, Mahidol University</p> <p>Bachelor of Music Program</p> <p>Master of Music Program (International Program)</p> <p>Master of Arts Program in Music Education (Special Program)</p>
UNWTO. TedQual	<p>Mahidol University International College</p> <p>Bachelor of Business Administration Program in International Hospitality Management (International Program)</p>
WFME	<p>Faculty of Medicine Siriraj Hospital</p> <p>Doctor of Medicine Program, Faculty of Medicine Siriraj Hospital</p> <p>Faculty of Medicine Ramathibodi Hospital</p> <p>Doctor of Medicine Program, Faculty of Medicine Ramathibodi Hospital</p>
WFOT	<p>Faculty of Physical Therapy</p> <p>Bachelor of Science Program in Occupational Therapy</p>

## International Standard for Academic service

### MU EdPEX

Mahidol University remains monitoring our potential of human resource especially administration system by Education Criteria for Performance Excellence assessment (EdPEX). In academic year 2020, our 12 and 21 work units gained more than 300 and 200 points, respectively. Besides, 10 work units were proposed for TQA assessment. From the evaluation, our MU's Dee score based on the EdPEX score was evaluated at 4B level (261-290 marks) and 3A level (191-210 marks) for our organization processes and results, respectively. While, the online EdPEX assessment were separately investigated in the participated work units by using 4 types:

1. Assessment of organization processes and results (MUEdPEX-A1)
2. Assessment of organization processes (MUEdPEX-A2)
3. Assessment of organization results (MUEdPEX-A3)
4. Thailand Quality Award: TQA

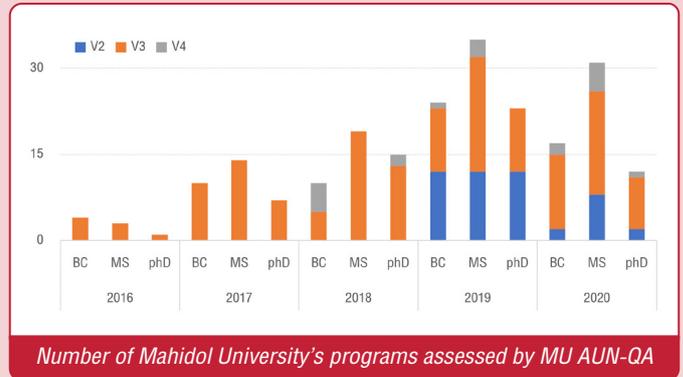


On 19th March 2020, the Faculty of Medicine Siriraj Hospital received the "Thailand Quality Class Plus: Operation".

While, the Faculty of Nursing was awarded as the "Thailand Quality Class" by the Thailand Productivity Institute of National Quality Award 2020.

## MU AUN-QA

To contribute to the academic qualification system in all of our work units, the AUN-QA assessment was applied as the key tool for our educational system investigation as well as to evaluate the quality of curriculum under MU AUN-QA standard. From 2016 to 2020, the total of 206 courses - Bachelor (BC), Master (MS), and PhD programs - were assessed by using AUN-QA as shown below.



We have been encouraging our staff to understand the standard's process and its criteria in both report and assessment correspondingly. Our staff were anticipated to evaluate and report the feedback for improvement of their own system as well as the community. In 2020, to enhance the number of our assessors, Mahidol University has organized the 8th workshop of EdPEX Assessor and AUN-QA Assessor. The total of 223 assessors, 135 staff for EdPEX standard and 88 staff for AUN-QA, were inducted into the University's adaptive improvement.



## Embedding sustainability life-long learning

In 2020 academic year, most of our students, researchers and staff were unable to attend face-to-face classes. We remain our online (Massive Open Online Course (MOOC) and Small Private Online Course (SPOC) delivered through the MUx platform to support the active engagement and life-long learning, spreading knowledge and skills for the students and staff as well as the public. Since 2018, we have been providing comprehensive programs, featuring over than 140 lecture sessions and 30 interactive online courses to more than 700,000 participants and 40,000 certificate holders. The online course subjects offered, for example, were:

### Digital Literacy: Digital Media Contents for Online Marketing



Participants broaden in definition, type, and creating tools of digital media contents. This basic knowledge was expected to be integrated with students' creativity in the scope of copyright and code of conduct for digital information media production.

### Communication Literacy: Listening and Speaking for Communication



Participants practice English listening and speaking in everyday life situations; discussion; speech acts; interpretations; analyzing data from conversations, lectures, and reading academic issues, news, and reports from various sources.

### Financial and Management Literacy: Financial Management



An overview of financial management, financial statements, financial statement analysis, risk and return, time value of money, bonds and their valuation, stocks and their valuation, cost of capital, capital budgeting, cash flow estimation, risk analysis and real options, long-term financial planning, capital structure decisions, issuing securities, refunding operation, current asset management, short-term financing, derivatives and risk management.

### Science and Environment Literacy: Foundation of Neuroscience

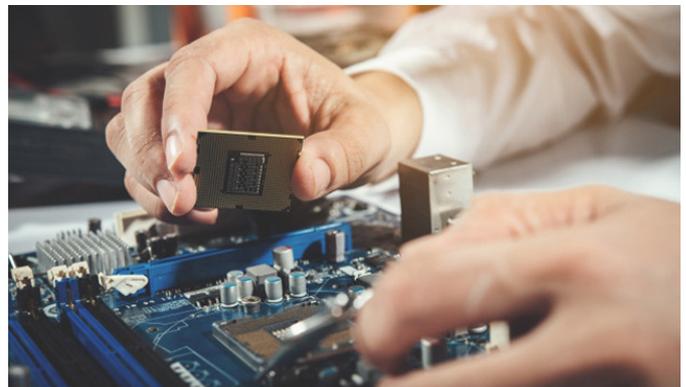


Scope of scientific study of brain and the nervous system; Cell and tissue of the nervous system; Electrical properties of neurons; Neural transmission; Development of the nervous system; Basic anatomy of the human brain; Systems for sensation, control of movements and internal organs; Cognitive processes of the brain.

## Mahidol Apprenticeship Program (MAP)



MAP is one of our online platforms developed by the Faculty of Graduate Studies, Mahidol University. MAP has many online subjects, short courses, and training. As we know that education is essential for sustainable development, two types of apprenticeship programs; Mahidol Apprenticeship Program Curriculum (MAP-C) and Mahidol Apprenticeship Program Extra (MAP-Ex), are provided appropriately to reskill, upskill, and add skill for different interested learners. All people, without requirement of academic background, age, and career, can access the integrated module courses via MAP-C or short course training organized by Mahidol University via MAP-Ex. Participants receive a certificate of completion from Mahidol University which is transferable in the higher education level in Mahidol University. In 2020, 229 courses were available on the platform and 356 certifications provided to all of 356 participants.



## HIDEF principle

In order to create a sustainable community as well as expose our people to assorted points of view, MU students are engaged with each other and the surrounding community through extracurricular activities either compulsory or elective activities provided by the University's HIDEF principle. Our students can find an opportunity to learn and gain experience from outside of the classroom fostering them to become graduates who portray desirable characters and organizational culture of Mahidol University. The activities can search and alternatively attend either onsite or online by at least three of five categories of HIDEF activities:





**Health Literacy:** demonstrating, understanding and practicing a healthy lifestyle

These activities focus on development of students' fundamental understanding of health conditions which can be applied to their lives to improve their well-being and practice a healthy lifestyle suitable for their lives; understanding the methods to prevent, resolve and support their health conditions; staying clear of risk conditions of any diseases affecting both physical and mental health conditions; always monitoring their personal health conditions and supporting the wellness of their family and community.

**Internationalization:** developing students' skills and quality in response to global challenge

These activities aim to inspire the student to gain their skills and experience regarding to the community issues or particular local areas; being knowledgeable and able to live in this interconnected world regarding the relationship of people, cultures, organizations and globalization; focusing on fostering students to become global citizen and global talent who are aware of their duties and responsibilities as the global citizen and contribute to a strong and peaceful society.

**Digital Literacy:** skills regarding understanding and using digital technology

These activities aim to maximize students' skills for effective application of the existing tools, equipment and digital technology, such as computers, smartphones, tablets, computer programs and social media for communication, work and cooperation or for modernizing working procedure and system. The digital skill development covered four dimensions: effective use, understanding, creation and access of digital technology.

**Environmental Literacy:** understanding and being well-informed about environment

These activities are fostering students to have an awareness on values of natural resources and environment conservation for the existence of community and society; with having fundamental knowledge and understanding about environment, conditions and circumstances that affect the environment as well as impacts of the existence of society on global nature. The environmental skills include to being able to examine and analyze environmental issues and identify potential preventions and solutions; providing appropriate and effective environmental preservation strategies; and taking part in environmental issues both from personal standpoint and as a member of the society.

**Financial literacy: understanding and being well-informed about finance, economy and business**

These activities aim to develop students' knowledge and understanding financial products to be able to effectively plan and manage their expenses, savings and debts. The financial management skill will enhance the well-being of student and their family; consciously handling challenges, such as having an appropriate financial plan and making wise and effective decisions responding to daily condition; as well as being able to effectively take part in businesses and economic systems which can contribute to people's sustainable well-being and the nation's economic stability in the future.



Student activities	Number of participants
Startup: AgTech for future agrobusiness	64
Integration of research for business	54
How to Write a Winning Research Proposal	83
Startup: AgTech for Franchise business	80
Nutritional labeling literacy "Nutritional tricks"	153
Cybersecurity in New Normal	105
1st step to be an entrepreneur	51
Improve mental immunity in New Normal life	148
Mental caring for MU graduate student	128
Intensive English course for undergrad student	2,682
Transformative learning training	1,644

# Contemplative Education Center

The Contemplative Education Center is an innovative center for the teaching and research of contemplative education and practice in Thailand. Since 2006, the center's work is operated by «Contemplative Practitioners Network», a group of scholars, practitioners and activists who have applied contemplative practices in their work in classrooms, prisons, the business sector, and government agencies in order to implement variety of learning including many master programs, public seminars, workshops and conferences. To be the main institution of Thailand in integrating contemplative practices to the educational system for human development, the center aims to create the science of contemplative education, focuses on balanced self – development and strengthening the learning process for true happiness under operation in four main areas:

1. Research and knowledge development
2. Curriculum development and teaching
3. Training and networking
4. Public media and publication



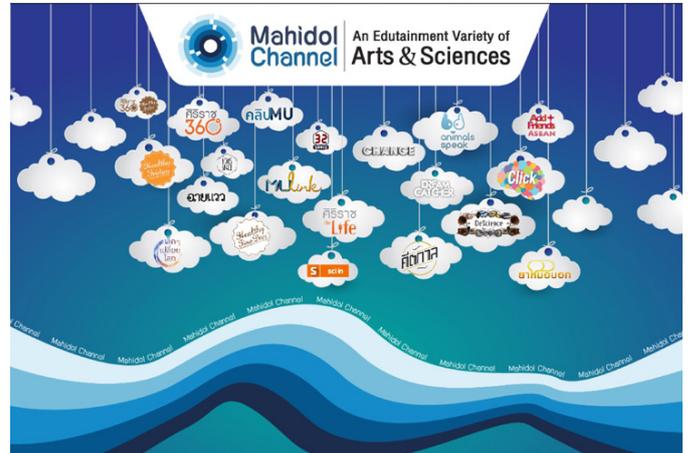
CEC's philosophy: Create inner stability

# Transformative learning training

By collaboration of the Student Affairs Division and Academic Affairs Division, the education transform programs were organized aiming to implement our strategy to be an 'Excellence in Outcome' based education for globally-competent graduates. This program provides a training of trainers for students, personnel, and teachers to effectively learn with mindfulness and intellect.



# Dialog with community



Mahidol University remains its mission to be the resource pool of knowledge. We have established Mahidol Channel to be inclusive media which can provide essential information for all people to access with easy understanding and relating to everyone's daily life. In 2020, Mahidol Channel on Youtube platform can reach the 1st places of academic institution channel in Thailand by approximately 166 million views.

Moreover, the stakeholders and interested people can get access the annual report of our activities and operation via online and our website .



The number of viewers in 2017-2020



# Gender Equality

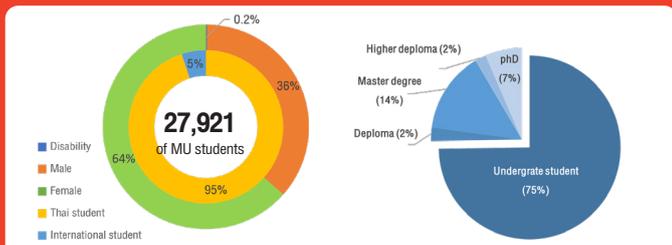
## HeForShe University Tour Bringing Gender Equality to Your Campus

By collaboration of International College, Mahidol University and UN Women; the special event organized for the purpose of enlighten the gender equality throughout several activities. For example, discussion and case studies talk show on the topic of “Don’t tell me how to dress” and “Tell me to respect” among experts, celebrity model, actress, woman right campaigners, writers, lawyers, and social activists. This talk show opened up for comment and idea from students as well as guiding the solution of inequality situation. The empowerment for stopping sex harassment is also shown in the exhibition of #DontTellMeHowToDress campaign.

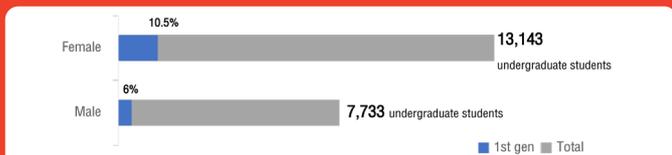


## Student enrollment

Mahidol University always recognizes that quality education does reduce social inequality. We, therefore, attempt to ensure that teaching and research serve all of society: people from all backgrounds, nation, social status, gender, as well as from undergraduates to lifelong learners responding to SDG5: Gender equality and SDG10: Reduce inequality. In 2020, our student population was approximately 28,000 students with 95% Thai students and 5% international students from many countries over the world.



Proportion of MU student categorized by gender, country and education level

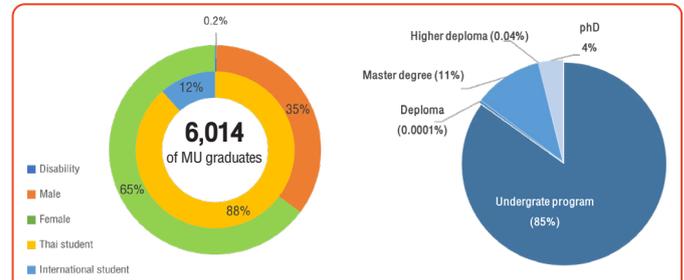


Number of 1st generation student from their family separated by gender in 2020



Map of international students' mother countries

In the 2020 academic year, we produced 5,504 graduates; from 5,100 undergraduate programs, and 916 graduate programs with proportion of 65% female and 35% male students. Also, the 14 students with disabilities graduated as 26.5% of our disabilities graduation rate. As many as 85% of 4,600 MU graduates have earned bachelor's degree and 39.5% of 2,765 surveyed of bachelor's graduates were employed.



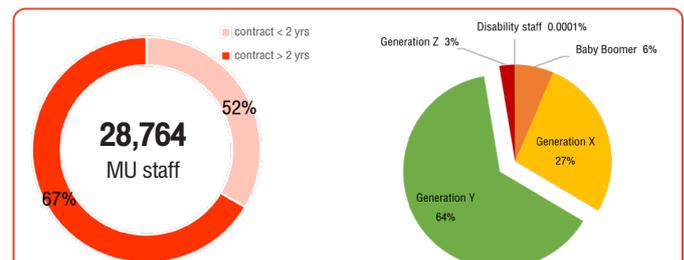
Proportion of graduates' student categorized by gender, country and education level

## Staff employment

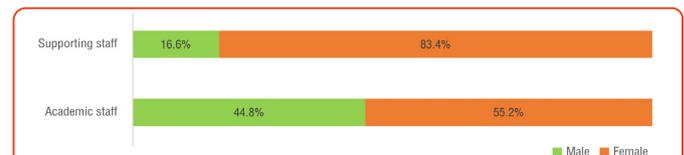
We are already working to meet the needs of a more diverse population, also for our staff recruitment. In 2020, the total number of 28,764 staff members consists of 25,353 supporting staff and 3,321 academic staff, with 7.3% recruitment rate and 4.5% turnover rate.

### Number of supporting and academic staff in each position

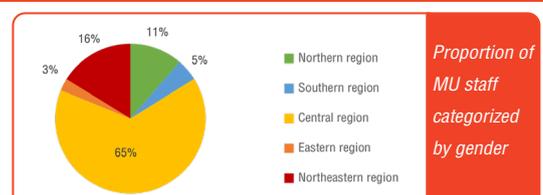
	Male	Female	Total
<b>Supporting staff</b>	<b>4,213</b>	<b>21,140</b>	<b>25,353</b>
Expert/Senior expert	7	28	35
Senior experienced/Senior professional	237	1727	1974
Experienced/Professional	69	323	392
Operational staff	3,882	19,052	22,934
Disable staff	8	10	18
<b>Academic staff</b>	<b>1,487</b>	<b>1,834</b>	<b>3,321</b>
Professor	56	56	112
Associate professor	333	409	742
Assistance professor	448	541	989
Lecturer	620	750	1,370
Researcher	26	77	103
Disable staff	4	1	5
<b>Summary</b>	<b>5,700</b>	<b>22,974</b>	<b>28,674</b>



Proportion of MU staff categorized by contract period (Left) and generation (Right)



Proportion of MU staff categorized by gender



Proportion of MU staff categorized by gender



# SUSTAINABLE



# GROWTH



# Sustainable Growth



This strategy reflects the element of “Prosperity” in 5P concept. 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.” SDG-related Prosperity includes as shown in the following.

- SDG7: Affordable and clean energy
- SDG8: Decent work and economic growth
- SDG9: Industry, innovation and infrastructure
- SDG10: Reduced inequalities
- SDG11: Sustainable cities and communities

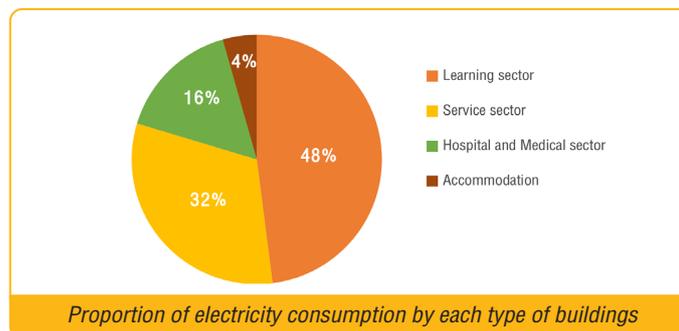
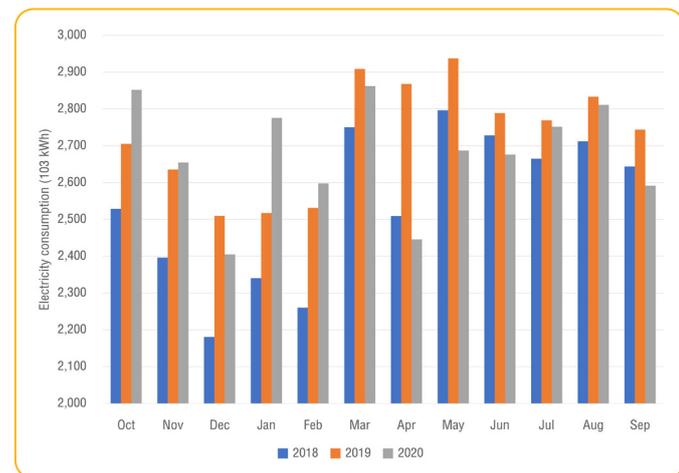
Activities that contribute to sustainable growth are summarized below.

## 7 AFFORDABLE AND CLEAN ENERGY

### Affordable and Clean Energy

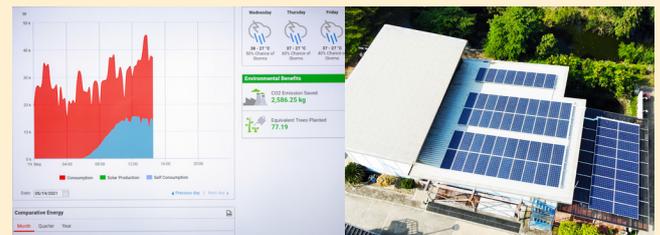
### Electricity consumption

In 2020 academic year, the electricity consumption of Mahidol University, a total of 321.1 million kWh, was slightly decreased by around 1.9% from the previous year. The higher peaks of electricity consumption were apparently found in October and January when compared to the electricity records of 2018 and 2019.



### Solar Cell System

Mahidol University has adopted the solar cell energy in order to reduce the electricity cost. Since 2015, we operated many activities related to renewable energy by determination of measurement and plan for increasing more renewable energy usage. Therefore, the solar cell system or solar rooftop in Mahidol University were set to be developed and integrated cover all of the university space. In 2019, we have operated the compact solar cell for application in the building. The Off Grid system, size 1.3 kW, of solar cell system was integrated to be back up power by using the battery storage. The storage batteries are provided for the students and staffs who come to access at the MU Learning center building and bus terminal for their phone, notebook, and power bank charging. Currently, our solar cell system can totally provide the electricity 202.7 W consists of the MU Learning Center Building (14.3 W) and bus terminal (188.4 W).



Solar Cell System in Salaya campus

In 2020, we have applied the Solar rooftop project to generate electricity for the wastewater treatment building in Salaya campus. The On-Grid solar cell system was adopted for alternate electricity which can switch to the general current when solar energy is not enough providing for the wastewater treatment station. The total of 66 solar cell circuits, maximum total generates as 21.78 kW, were installed in the wastewater treatment station. This Solar Rooftop project can feed four air conditioning units, one television, one refrigerator, two water pumps, and 30 LED light bulbs by around 80 – 100 unit per day which can save electricity cost by approximately 10,000 THB.

Additionally, in 2021, the solar rooftop and smart electricity development project will be launched in Salaya campus by 15 year-contracted with an external supplier. The solar panel will generate at least 12 MW with storage capacity of 500 kWh. Furthermore, the smart electricity system will be implemented in Salaya campus. The electricity supply from solar energy is expected to reduce around 35% of the total electricity utilization from fossil fuel. The program will save the university’s budget about approximate 2.4 million Baht per month or 419 million Baht in 15 years.

## Talk forum: role of education in SDG 8: Decent Work and Economic Growth



The Faculty of Science realizes the importance of preparation of research related to the sustainable development goals. The talk forum was organized through Cisco Webex for the purpose of discussion and exchange experiences in both education and industrial sectors. The SDG 8 and SDG 4 are concerned for the future academic works and researches adaptation. In this forum, participants were expected to broaden attitude and idea on education responding to the global challenge.

## Special supports for Coronavirus 2019 (COVID-19) effect

The spread of Coronavirus 2019 (COVID-19) in many countries including Thailand and its regions, caused widespread public health and economic impacts on people, and the Faculty of Graduate Studies in collaboration with the Graduate Studies of Mahidol University Alumni Association realize these impacts; hence, provide financial support for accommodating those students affected by the pandemic. The emergency grant for the graduate students who have been affected by COVID-19 in Thailand was allocated at least 10,000 THB per student. In 2020, we offered 10% reduction of tuition fees for all programs and 20% for student dormitory fees. All students were provided the corona virus health insurance. The related-COVID-19 financial aid amounts to 5,000 THB, further allocated for Thai and international students of total 783 scholarships. Moreover, 3-months free internet package is available for all students in order to access the online courses.

For all our staffs, the University has also provided the corona virus health insurance and their test service. We have prepared the quarantine place and healthcare service for those who got infected, and supported work from home policy to reduce the risk of COVID-19 cluster infection.

## Enhancement of Safety Practice of Research Laboratory (ESPREL)

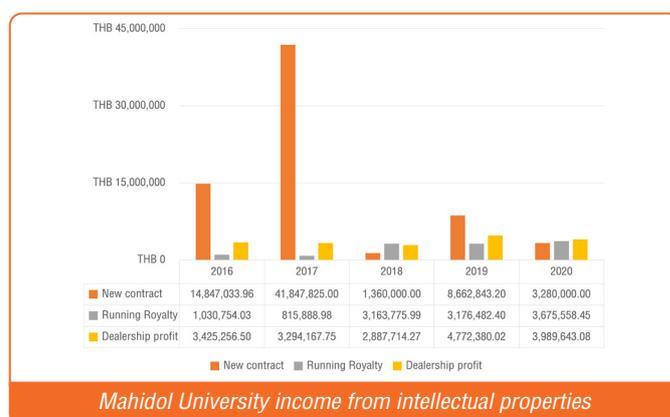
Since 2015, Mahidol University in collaboration with the National Research Council of Thailand (NRCT) to promote "Enhancement of Safety Practice of Research Laboratory (ESPREL)" program. The program aims at creating awareness on safety in the laboratory environment. In 2020, there were 169 laboratories obtained ESPREL certification.

## Intellectual Property

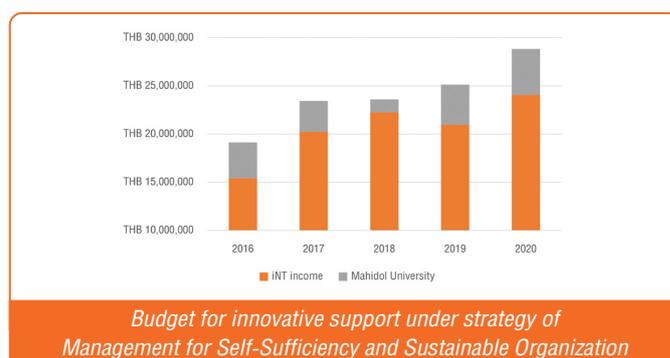
Mahidol University also dedicates to apply research into innovative solutions for current issues globally. Since 2016, research outcomes were transformed to be intellectual properties, with more than 4,000 intellectual properties and totally earning more than 100 million THB from the intellectual contracts as shown in the table below.

### Number of registered intellectual property

Type	2016		2017		2018		2019		2020	
	Filed	Grant	Filed	Grant	Filed	Grant	Filed	Grant	Filed	Grant
Patent	20	4	18	5	21	8	21	3	28	6
International patent	1	0	1	0	1	0	1	0	0	0
Petty patent	15	16	21	16	27	8	36	6	55	10
Copyright	783	796	150	150	555	555	49	48	544	480
Trademark	0	9	11	0	7	11	7	4	2	1
Trade Secrets	0	0	0	0	0	0	2	0	0	0



In 2020, around 28.8 million THB was provided for implementation of the strategy on Management for Self-Sufficiency and Sustainable Organization. Approximately 83.6% of the support budget was received from budget of the Institution for Technology and Management (iNT) and 16.4% was supported by Mahidol University.

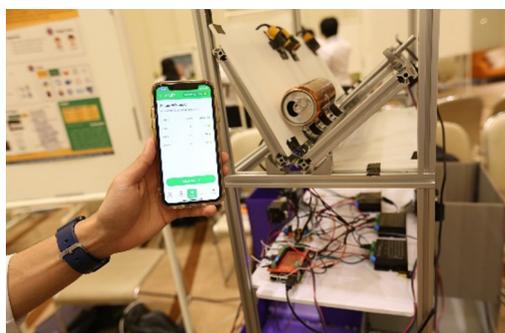


## List and activities of the spin-off company of Mahidol University

Spin-off company name	Activities
IQmed Innovation Co.,Ltd	Medical device and software development, Medical Prototyping, Consultation
Zenostic Co., Ltd.	A biotech startup that has made high-quality diagnostics tools for tackle with infectious diseases.
Envi Smart Tech Co.Ltd	Manufacturing and sell of organic waste digester, Consult, design, manufacture and sell environment friendly products, Product research and development
Medensy Co., Ltd.	HealthTech innovation prototyping and production
Bin Bin Innovation Co.,Ltd	Spin off company which using image recognition technology for garbage classification

## Highlight of Innovation

### BINBIN: a smart recycling bin & applications



The smart recycling bin and its applications called BINBIN was developed by the team of Lect. Dr. Pawitra Liamruk due to promote the upstream management of municipal waste in Thailand. BINBIN consists of four function units:

1. a smart recycling bin which is able to investigate and sort the input garbage via linked Bluetooth and application
2. Binbin User for the people who drop the trash into Binbin machine that will earn point
3. Binbin store for shop store who need to promote their shop with the point collection from the garbage recycling
4. Binbin Backoffice Website which is the administrator of recycle garbage sorting and its trading price.

By its prompt system, BINBIN can reduce around an hour of the garbage recycling process.

### Chujai: Robot helper for elderly



Chujai robot, developed by Lect. Dr. Konlakorn Wongpatikaseree and team, is used to monitor mental conditions of elderly to prevent and assist them from depression, stress, anxiety and memory problems. This robot can recognize the specific behavior of each individual person for behavior evaluation and real-time alert.

This research is integrating of Artificial Intelligence (AI) and the concept of clinical psychology specialized in the elderly that will improve quality of elderly life in aging society.

### Mahidol Quality Fair 6th in the theme of 'Innovative organization'



Owing to enhance the knowledge and inspiration of quality organization, we organized the Mahidol Quality Fair 6th in the theme of 'Innovative organization' a special talk of innovation experts in the topic of innovative establishment and development.



Number of participants, contestants and participated work unit in Mahidol Quality Fair since 2015 to 2020

### Development of household organic waste composer



The household organic waste composer was developed by Lect. Dr. Narin Boontanon, the Project Manager of Innovation village, and his team in order to manage organic waste while also reducing environmental impacts. This composer can effectively compose organic waste within 48 hours by microorganism process accelerated by aeration system.

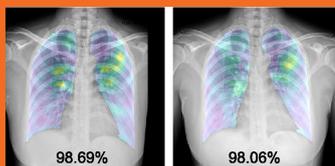
The aeration system, consisting of compact and low-priced materials, can be controlled by a simple electricity circuit which is applicable elsewhere. The composer is licensed under a Creative Commons Attribution-Non-Commercial- No Derivatives 3.0 Thailand License.

## Development of viral RNA extraction and COVID-19 diagnosis kit

By the Faculty of Tropical Medicine, the loop-mediated isothermal amplification (LAMP) was applied with Xylenol Orange (OX) to visibly detect the SAR-CoV-2. This COVID-19 diagnosis kit can investigate the COVID-19 infection by a one-step color changing lamp or COVID-19 OX-AMP colorimetric detection kit in 75 minutes. Moreover, the LAMP PCR for SARS-CoV-2 saliva test was developed by the Faculty of Medicine Ramathibodi Hospital and Faculty of Science to use for a large number of sample testing.

## COVID-19 detection and heatmap generation in chest x-ray images

The COVID-19 classification in chest x-ray images responding to automatically classify COVID-19 cases in chest x-ray images. By adopting the ResNet-101 architecture, the heatmap of segmented lung is constructed to visualize and emphasize signals of COVID-19 by Assoc.Prof. Dr. Worapan Kusakunniran and his team .



This research was applied to developing Inspectra CXR system which can rapidly detect respiratory symptoms via AI processing.

## Development of COVID-19 testing



The Faculty of Medical Technology has developed the alternative COVID-19 diagnosis due to respond to the increasing infection number in Thailand. Since the real-time RT-PCR is the standard method for COVID-19 infection

diagnosis, the housekeeping gene test based on RNA analysis of host genes from human cells was applied with RT-PCR to enhance the accuracy of indicator and its efficiency. Besides, the CT scanning by AI technology was alternately adopted for detecting the infected patient within 25 seconds.

## The Smart Medical Supply Platform 2020

The Smart Medical Supply Platform 2020 policy is integrated by knowhow and experience from the development of logistics management system for the COVID situation which is a collaboration of the Faculty of Engineering, Ministry of Higher Education, National Research Council of Thailand, Ministry of Public Health, Thailand Distribution Co., Ltd., Thai Transportation & Logistics Association, Chiang Mai University, and King Mongkut's University of Technology Thonburi. To solve the problem of lack and unbalance of drug stock, this platform can effectively administer trading and logistics of drug, as well as smart donation and the central procurement system which can promptly respond to the COVID-19 situation for 2,641 hospitals in Thailand.

## Development of Dust Mite Allergy Diagnostic Test & Therapeutic Vaccine

The prevalence of allergy in Thailand compared to the world is around 20 – 40%. Previously, allergy diagnosis relied on various imported reagents. The effective diagnostic test kit and therapeutic vaccine was developed by the multidisciplinary collaborations of medical doctors, scientists, and pharmaceutical companies under the leading of Assoc. Prof. Dr. Pongsakorn Tantilipikorn, Head of Center of Research Excellence in Allergy,



Faculty of Medicine Siriraj Hospital. This breakthrough innovation contributes to the life quality of allergic patient as well as the medical care to be accessible for all.

## Development of AI robots for supporting the healthcare services



Currently, social distancing and less contact with infected objects are challenges for the COVID-19 pandemic solution. The Faculty of Engineering collaborated with Golden Jubilee Medical Center and Faculty of Medical Siriraj Hospital to develop models

of AI to reduce the risk of infection from human to human. The delivered AI, called Robot Foodie, was developed for food and medicine delivery services in hospitals. With QR-Code Mapping and 30-50 kg loading capacity, Foodie robot can deliver food and medicine to 200 patients per day at 8 m/s. Another, the AI robot called «Wasties» was designed to reduce the risk during infected waste collecting process. With its Automated Guide Vehicle (AGV) navigating by magnet band, 5-kg lifting Cobot, and machine vision; Wasties could collect around 500 kg per time or 10 tons per day. Moreover, with the collaboration between Faculty of Engineering and Institute of Molecular Biosciences, the AI-Immunizer Robot was innovated in order to reduce the risk of infection during COVID-19 sample investigation. This robot can efficiently prepare the sample, analyze and evaluate the DNA result, as well as record and interpret into the illustration screen.







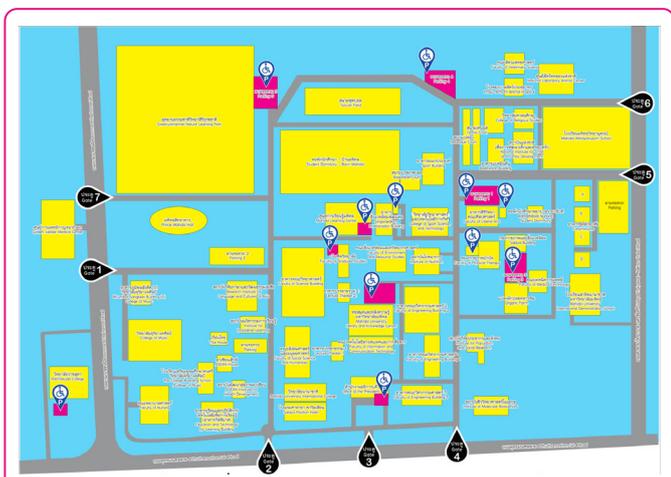
## Disability Support Services Mahidol University (DSS Mahidol)

The DSS unit working as one stop service for helping and accommodating all of MU disabled students and staff to equitably access the University educational systems, such as providing guideline and adjusting the appropriate courses, providing the Individualized Services Plan (ISP) for accessible learning media, preparing the essential tools and equipment (e.g. braille display, pearl camera, wheelchair) for their daily life, as well as creating the accommodated environment by facilitated universal design. We create communities that those with disabilities can live along with others. Students with disabilities will be assisted by volunteer helpers who are the same students, thereby opening up their opportunities to be a part of the university community, as well as outside society. Moreover, we broaden their career opportunities through internship and career training.



As one of our values is to develop the student's altruism, we support all of our students who are willing to help and be a friend with disabled students. The participating student, either volunteer or with disabilities,

will communicate with each other via many activities, such as painting, parking areas, media creation, and improving the environment to facilitate for those with disabilities.



Map of disability parking

## Bilingual Education

Bilingual Education project, developed by the Research Institute for Languages and Cultures of Asia, is practical research which was conducted at local schools in the southern region and its border region. The knowledge and information transformation is provided to the local student owing to teaching training as an effective local teacher. In 2018, the succession of this project was awarded as UNESCO King Sejong Literacy Prize by UNESCO. By these, bilingual education and local language were defined to be the 21st century skills in the 20-years Strategic Plan for Education in Special Development Zones in the Southern Border Provinces (2017 - 2036). Besides, this network also serves as a background knowledge for the National Security Policy



(2015-2021) which aims to promote all citizens living peacefully, proud of their own unique culture, and strengthen their multicultural society.

## Archive of Languages and Cultures of Ethnic Groups of Thailand database

Linguists at the Research Institute for Languages and Cultures of Asia (RILCA), Mahidol University has been working with more than 20 ethnic groups on language revitalization. We found that most ethnic groups wish to preserve or revive their language and culture and transfer them into the new generation. The LangArchive-TH online database, led by Prof. Dr. Siripen Ungsitipoonporn collaborated with Endangered Languages Archive (ELAR), SOAS University of London and Newton fund was established in order to document the digital database system to support research studies and collect knowledge of ethnic groups in Thailand, especially the language group.



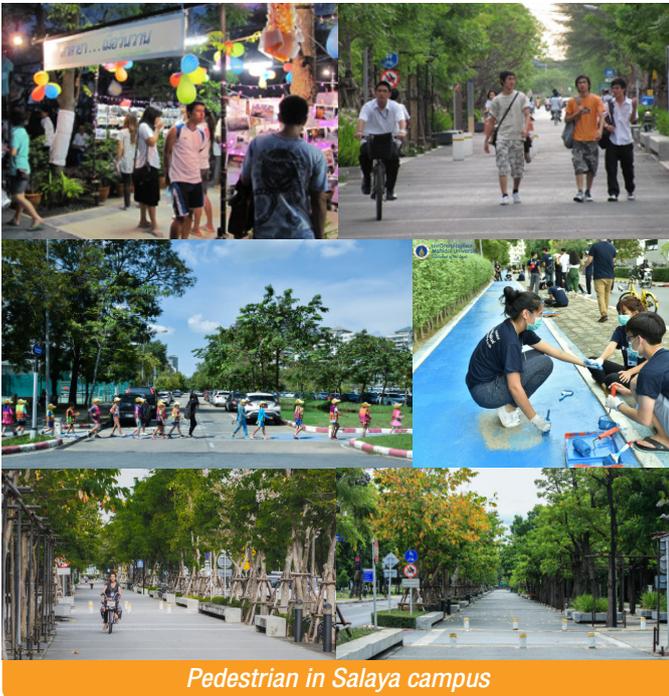
## Social conflict education medias

Mahidol University realized that social conflict is the vital obstacle for sustainable development. As academic units, we produce many medias and campaigns to reduce the social conflict and educate about social diversity to public via posters publication and online platforms such as Facebook, YouTube, and Podcast. The conflict topics, for example bullying, political dissent, and social stigma by COVID-19.



## Accessible pedestrian and cover way

Mahidol University has determined the physical development of environment and facilitates in the campus area under implementation of “A Promised Place to Live and Learn with Nature” policy. The transportation, pedestrian, parking area, and bicycle pathway were developed to respond the principles of Green campus which consist of: Safety, Tidiness, Environmentally Sound, and Community Satisfaction. The pathway construction was conducted in scope of Eco-design ideas; such as limit the number of traffic lanes and increase more accessible public transportation, change the road surface to more suitable for walking and bicycling.



*Pedestrian in Salaya campus*

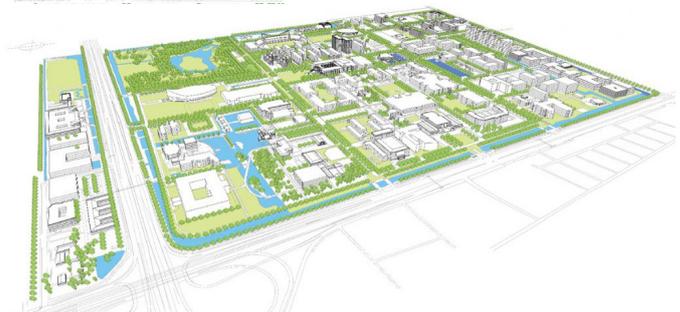
Public areas such as MU Salaya park, Chaofah garden, and MU open space are available for recreation and exercise activities. A total of 3 km pathway is accommodated for walking and bicycling. To promote good health and well-being of all people regarding SMART Sustainability strategy, SDG3 and 11, the improvement of MU Lake to be a recreation and activity space has been designed depending on the land use survey and record.

## Accommodation and Recreation facilities

Mahidol University provides accessible housing, recreation and sports facilities to promote healthy lifestyles and wellbeing for our students and staff as well as local people nearby. Affordable accommodations, averaging a monthly rental cost of about 4,000 – 8,000 Baht (25%-50% of 15,000 THB living cost) for a 20-30 m<sup>3</sup>, are available either on campus or outside the campus.

Also, the sport complex services consisting of multi-purpose buildings, indoor stadiums, and outdoor fields and courts for 11 types of sports such as football, athletics, basketball, futsal, volleyball, swimming pool, petanque, sepak takraw, hoop takraw, badminton and tennis are available for our students, staff, and the public.

The physical development of the environment and facilities in the campus area were developed in order to improve life quality of our students and staff. Available transportation, pedestrian, parking areas, and bicycle pathways were developed by collaboration between Mahidol University and Ashram of Community and Environmental Architect to respond the principles of Green campus which consists of: Safety, Tidiness, Environmentally Sound, and Community Satisfaction. The pathway construction was conducted in scope of Eco-design ideas; such as limit the number of traffic lanes and increase more accessible public transportation, change the road surface to be more suitable for walking and bicycling.



We also realized the importance of the accessible area for all people, including those with disabilities. The facilities were designed responding to the universal design namely disability parking area, slope for wheelchair, disability sign, cover way, and information services for public transport.



## Smart Building

Mahidol University enhances its buildings to be smart buildings. Smart building is integration of good energy management and several technologies including smart digital water meter, automatic meter reading, automatic water levels measurement and others. In 2020, 78.73% of total building in Salaya campus is a smart building in accordance with the definition of UI GreenMetric Ranking 2020 covering considered components of automation, safety, energy, water, indoor environment and lighting.



## Student council and clubs

Mahidol University understood that knowledge and experience is not only gained by spending time in the classroom, but by participating and communicating with each other. We organized the student council, student clubs, and activities to promote the student society. The student council play a role as the representor of all undergraduate student to call out for their equality right and benefits. While, student clubs provide the facilities and organize student activities responding to implementation of the university policy. Moreover, the student can enjoy their campus life through participating in many types of activity clubs such as volunteer activity, art and culture, academic, and sport clubs.



## No smoking projects

To motivate our students and staff who are willing for smoking reduction as well as stop smoking for their health, we organized the “Hero: No smoking project” which provides 1-year physical therapy course for participants by our medical service centers. After finishing the therapy course, the participants will be awarded and encouraged to share their experience in no smoking therapy with others. Also, we publish the information and open up for complain about the smoking activities in the university area via our website . Besides, Mahidol University have set the “Protection of no smoking person and restrict the smoking area, B.E. 2556” in order to control the effect and pollution from smoking activities.



## Megaproject of high-speed rail linked to the airport

In 2020, the Faculty of Engineering collaborated with the CP group to conduct research on the construction project of high-speed trains. The plan consists of three stages:

- 1) Improvement of previous airport rail link
- 2) Construction of high-speed rail system from

Suvarnabhumi airport to U-Tapao airport located in the Eastern Economic Corridor (EEC) area

- 3) The expansion of the rail link to Don Muang airport





**SUSTAINABLE**



**RESOURCE**

# Sustainable Resource



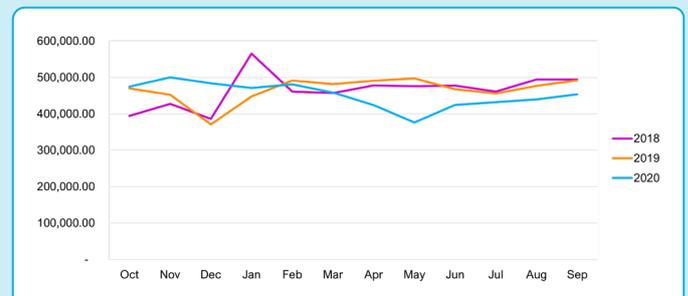
This strategy reflects the element of “Planet” in 5P concept. The SDGs set a goal to protect the planet “so it can support the needs of the present and future generations.” Nearly every day we are seeing just how connected – and fundamental – climate change is to global development. SDG-related Planet includes as shown in the following.

- SDG6: Clean water and sanitation
- SDG12: Responsible consumption and production
- SDG13: Climate action
- SDG14: Life below water
- SDG15: Life on land

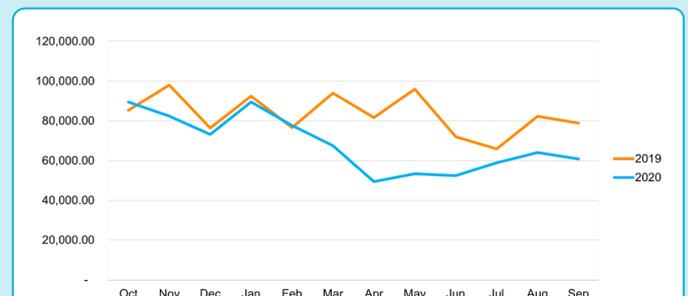
Activities that contribute to sustainable resource are summarized below.

## Water management

In 2020, the entire Mahidol University reduced its water consumption by around 3.77 %. A total amount of 5.4 million m<sup>3</sup> tap water was supplied for all our 6 campuses. Water consumption per month obviously decreased between April 2020 and September 2020. However, we have retained the water recycling from the wastewater treatment system. In case of Salaya campus, the water consumption in 2019 and 2020 was 839,690 m<sup>3</sup> and 688,780 m<sup>3</sup>, respectively. These indicate a reduction of 17.97% compared with 2019 water consumption. It is noteworthy that the water management system on campus is zero discharge or 100% recycled water.



Water consumption per month of Mahidol University in fiscal year 2020



Water consumption per month in Salaya campus in fiscal year 2020

## 6 CLEAN WATER AND SANITATION

### Clean Water and Sanitation

### Free drinking water machine



In order to ensure that our people can access clean drinking water, Mahidol University has installed free drinking water machines in many areas of Salaya campus in September 2020. Free drinking water available to serve students, staff, and visitors who are living in our area.

Additionally, providing free drinking water machines also responds to plastic waste reduction policies since it encourages people to bring their own water containers. In 2020, we found that the project has achieved the reduction of 450 ml plastic bottles as the maximum of 138,905 bottles reduced.



In 2020, solid waste generated in Mahidol University in Salaya campus was significantly decreased by 59.89% totally from 2019. Moreover, our proportion of recycled waste slightly increased from 47.31% in 2019 to 47.88% in 2020.



Total weight of waste categorized by type in 2019 and 2020 in Salaya campus

Waste Types	2019		2020	
	Tons	Percentage	Tons	Percentage
Hazardous waste	2.12	0.09	0.12	0.01
Chemical waste	2.56	0.11	2.89	0.30
Infectious waste	21.19	0.87	7.25	0.75
Recycled waste	1,145.83	47.31	463.03	47.89
Solid waste	1,250.00	51.62	493.65	51.05
<b>Total</b>	<b>2,421.70</b>	<b>100.00</b>	<b>966.94</b>	<b>100.00</b>

We realized that significant amount of hazardous waste was generated in many work units, especially medical and science laboratories. The infectious and chemical substances from research and teaching activities were expected to be correctly managed. By these, we provide the essential information and training of hazardous wastes labelling and its sorting for the concerned students and staff. All of hazardous waste was contained in the high-density polyethylene (HDPE) containers with clear sealing and labeling, either in fluid or solid form. Before the downstream management of waste disposal, we assign the landscape unit, Division of Physical Systems and Environment to effectively collect and manage all of hazardous wastes in the university. The landscape unit plays a role in separating and recording amounts of hazardous waste from installed garbage in the campus area.



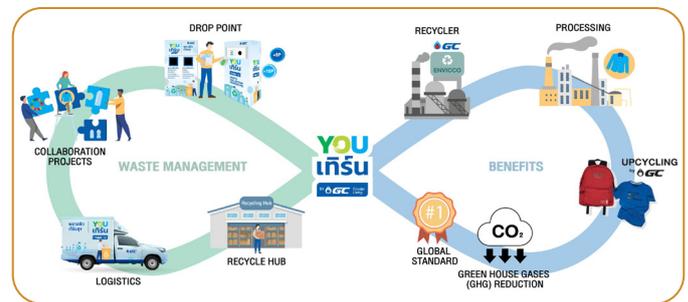
## Circular Economy

The circular economy projects, in collaboration with many partners, aim to achieve environmentally sound management of chemicals and all wastes, especially plastic products, throughout their life cycle to minimize their adverse impacts on human health and the environment.

Collaborative projects with PTT Global Chemical Public Company Limited, namely the ThinkCycle Bank and GC Circular Living Symposium 2020 initiatives were organized.

### U-TURN Platform

U-TURN Platform (GC) is a Circular Economy project which aims to present and create waste management network, especially plastic waste. Throughout 2020, two events were held:



### “GC x Mahidol Webinar: Circular Economy & Sustainability for Higher Education”

The online webinar was organized for the purpose of exchanging information about the circular economy concept, development of technology on resource efficiency management, recycling process for sustainable growth and eco-friendly production.

### “We turn” campaign

The campaign conducted the collection of plastic bottle waste as a material for upcycling polo shirt. By this, 5 plastic bottle donation points were located at Mahidol University. The distribution of the polo shirt was to support the provision of essential equipment for COVID-19 patients at the Golden Jubilee Medical Center. After the campaign, more than 8,000 plastic bottles were collected and more than 400 polo shirts were obtained.



## Reducing plastic and foam policies



Reduction of environmental burden is prioritized as our strategy to be a sustainable university. We have set out

three policy announcements for waste management at our university, as the following:

- Policy of cancelation of foam containers and reduction of plastic containers in all shops and cafeterias in the university (2013): The Eco-friendly container and bringing consumer's own container were highly recommended to be used.
- Policy of reduce, reuse, and recycle of plastic bag promotion (2017): On campus convenience stores were determined to cancel all types of plastic bags except the cooked food since July, 2017. The reused plastic bag and bringing consumer's own bag were highly recommended to be used.
- Policy of foam and plastic waste management (2020): the single-use plastic bag and foam container were banned in all of the University's activities. The eco-friendly container, such as paper container and container made from bagasse, banana fiber, bamboo or cassava materials were highly recommended to be used.



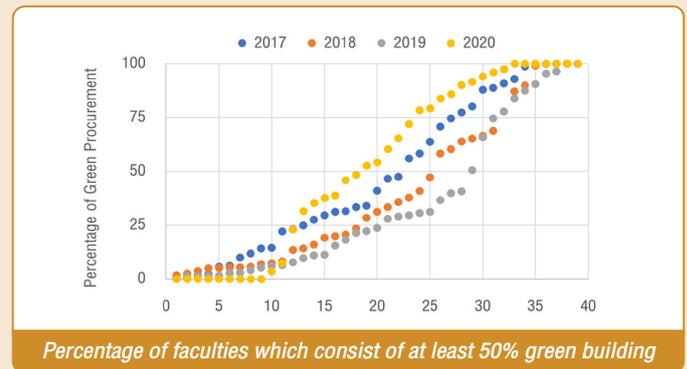
## Grab your own cup and taking the sweetness out campaign

As we are concerned that excess sugar consumption will cause long-term health problems for staff and students, the Division of Physical Systems has been promoting reducing sugary drinking and plastic cup use in collaboration with 44 beverage stores. Our students and staff can be given the option of the beverage's sweet level and also get the beverage's discount when bringing their own cup.



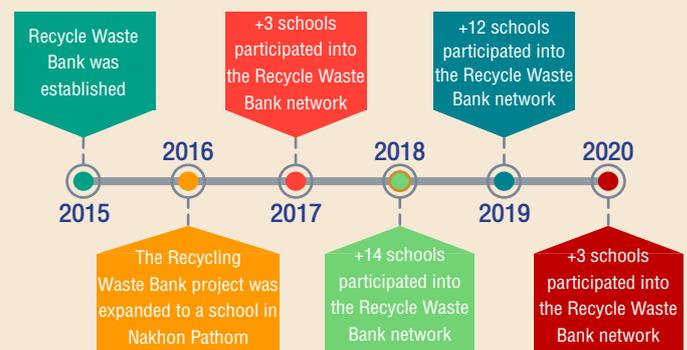
## Green procurement

In 2020, around 69% of 329 million THB procurement budget was committed under green procurement.



## Eco Town

According to succession of "Clean and Clear" project since 2008 and Mahidol University Development strategy B.E. 2555-2563, Mahidol University has been connected itself to community through activities under "Eco Town" mission. The project on waste recycling bank was distributed to the local area by the University communication. Knowledge of waste management, waste sorting system, and essential equipment were provided to 8 participating schools in Nakhon Pathom province. By collaboration with PTT Global Chemical Public Company Limited, this project was expanded to 22 local schools in Rayong province and 3 schools in Burirum province.





## ThinkCycle Bank

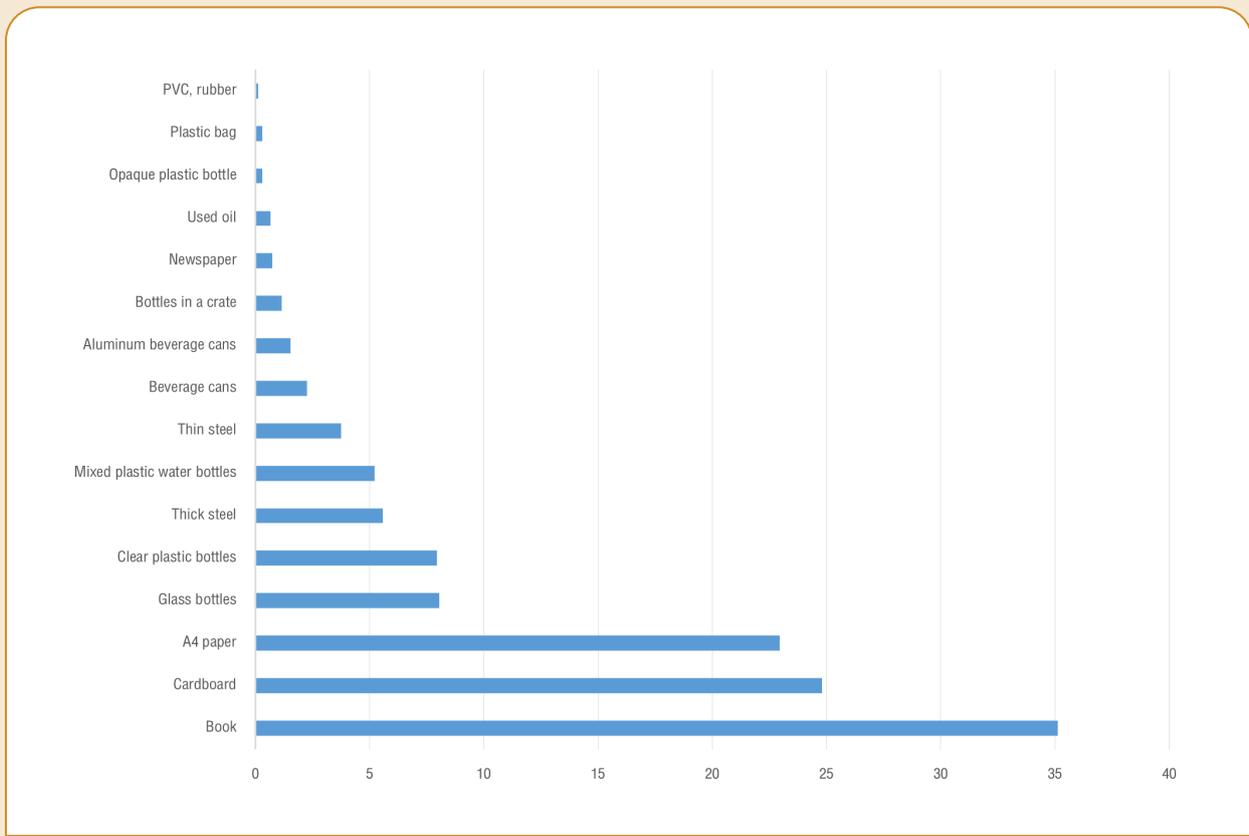
Mahidol University has undertaken the recycling waste bank network project called “ThinkCycle Bank” and “Sustainable waste management to schools and communities” to carry out the government’s policy in promoting the efficient waste management system. Think cycle Bank project is currently participated by 33 schools which were continuously monitored by Mahidol University. In 2020, the Think Cycle Bank managed over 15.87 tons of recycling waste and received the pay back of around 36,000 THB.



## Mahidol recyclable waste bank

In this year, the recycled waste was participated by 2,377 members and received 120.48 tons of 16 categories recyclable waste or 12.59 % of the total municipal waste.

Moreover, all biodegradable waste including amount of residual food and litters was collected and generated into 24.5 tons of composting fertilizer for the University’s landscape improvement as well as distribution to the local people.

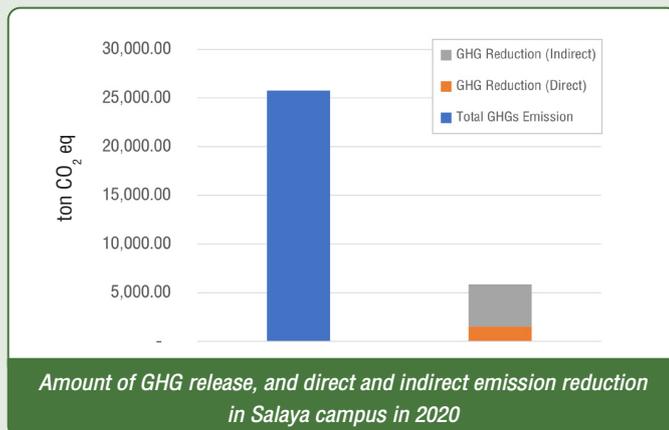


*Weight of recycle wastes (tons) collected by the waste recycling bank in 2020*



## Greenhouse gases reduction

In 2020, the GHG emission at Mahidol University in Salaya campus, our main campus, was assessed as 25,773.52 tons CO<sub>2</sub> eq (based on IPCC AR5 emission factors) in which Scope 1, Scope 2 and Scope 3 were responsible for 23.57%, 75.66% and 0.77%, respectively. The direct emission was decreased by 5.60% or 1,529.85 tons CO<sub>2</sub> eq in comparison with 2019 GHG emission due to energy consumption reduction. In addition, the University implemented several activities to indirectly reduce such emissions through carbon-neutral executive management projects, plantation, fertilizer production originally generated from tree branches, plastic consumption reduction, SCADA programs and others. The total carbon indirect emission reduction in 2020 was 4,321.59 tons CO<sub>2</sub> eq. or 16.77% of total GHG emission in Salaya campus. Therefore, total GHG emission reduction was 5,851.44 tons CO<sub>2</sub> eq or 22.37%.



## Zero-discharge MU water management system

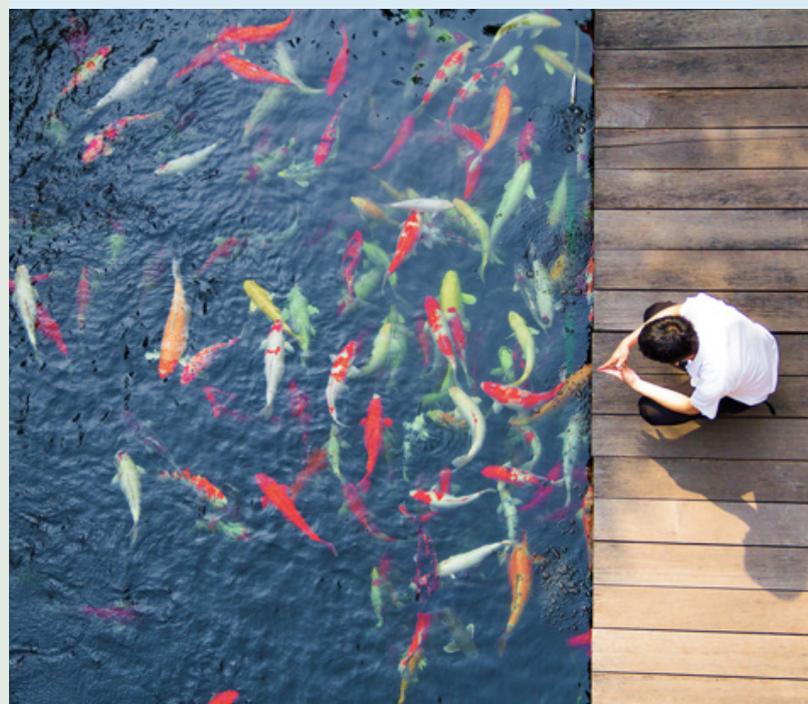
Since 2019, the RINGLOOP system was adopted to cover 19 zones of Salaya campus area for increasing efficiency of its irrigation. In 2020, the additional irrigation system was constructed to improve the continuing irrigation while some parts are broken or encountering problems. We organize the tap water system with water usage gauge installation in each work unit to ensure that sustainable water management and water accessibility for all. The digital water gauge online monitoring is further conducted and 24 work units' data is available for the administrators who require to check their work unit's tap water system.

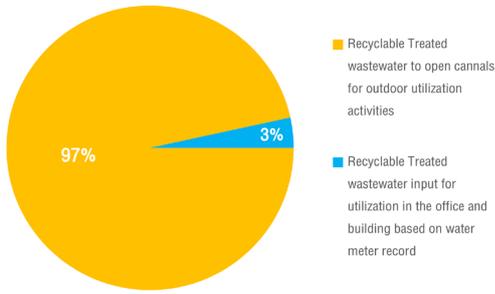


For the surface water and discharge system, the discharge of treated wastewater was entirely released to the rainwater storage canals and circulated for maintaining the recreation landscape in the university area. This can be regarded as "Zero discharge" campus. The surface water was monitored for its quality each month to ensure that the surface water reaches a standard quality for other livings as well as the ecosystem surrounding. Besides, the irrigation performance of each canal was biannually checked and restored to be available for water conservation during dry season. We also installed three water pump stations and develop the Mahidol Monitoring System (MMS) and to implement the better water management plan. The measure equipment and tools were installed as for remote monitoring and controlling in the university area.

## Carbon neutral executive management project

The project intended to offset the amount of Green House Gases (GHGs) annually emitted by activities of executive directors who volunteered to participate in this project. All executive directors were asked through questionnaire on their daily activities. Then, their answers were reviewed and calculated referring to a methodology of Thailand Greenhouse Gas Organization (TGO). In 2020, the total amount of the carbon offsetting of such emissions was conducted by purchasing 219 tons CO<sub>2</sub> eq of certified carbon credit from TGO, in which there was an increasing trend compared with 2019 purchasing about 23.03%.





Proportion of recyclable treated wastewater use in Salaya campus in 2020



Mahidol Monitoring System

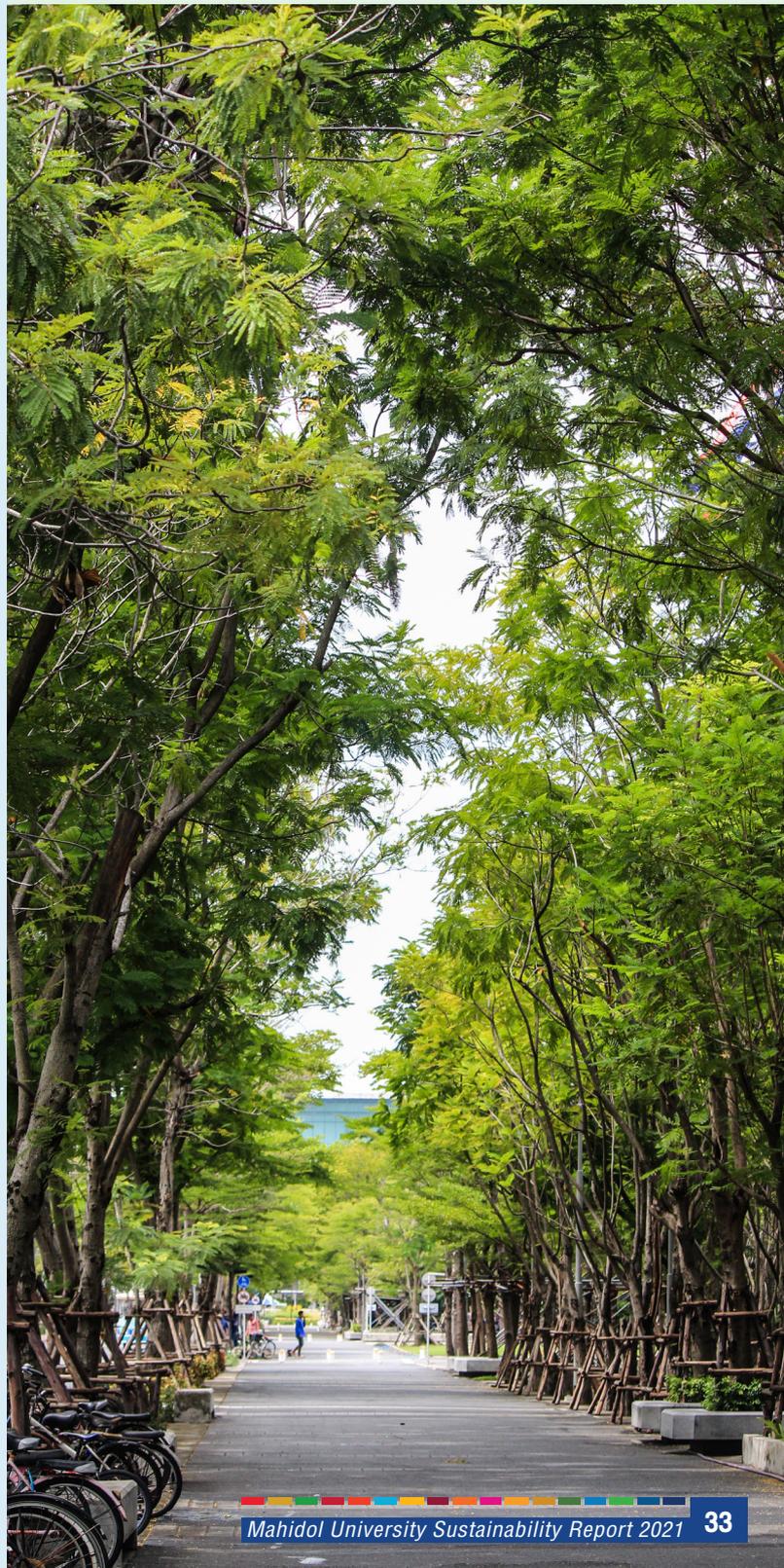
The wastewater treatment in Salaya campus is an aerobic biological treatment process (activated sludge) which can collect the wastewater by approximately 1,000 m<sup>3</sup> per day. The wastewater system receiving from 17 work units. The activated sludge comprises: aeration tank and sedimentation tank which aim to accelerate the microorganism's function on organic digestions. After the treatment, this treated water, separate with the bottom sludge, will be added by bio-chlorine for sanitation. While the excess sludge will be used as the composing fertilizer in the campus area. The treated water is reused for many purposes, such as recreation improvement and landscape area washing.



Wastewater treatment system

## Development of double pair RNA production in unicellular algae against shrimp disease

Centex Shrimp, Faculty of Science collaborated with BIOTEC, Kasetsart University, University of Kent, and University College London to develop the feeding technology to tackle shrimp disease caused by virus. The unicellular algae were cultivated to be the host of the same double pair RNA with the pathogenic virus for inhibit its gene expression in infected shrimp. This project apparently shows the opportunity of *Chlamydomonas reinhardtii* to produce the RNA in its chloroplast. Mixed feeding technology is continuously developing by this insight to control shrimp disease in the future.



### Green area

Since 2015, Mahidol University's aim remains to progress our area as the Green University. In 2020, Mahidol University Salaya campus occupies the area of 1,867,792 m<sup>2</sup> in which 51.27% or 957,690 m<sup>2</sup> is regarded as green area. Among this green area, 47.08% is traditional, 1.32% is pedestrian and 2.87% is vertical garden.

## Sireeruckhachati Nature Learning Park

Sireeruckhachati Nature Learning Park, Thailand's largest herb garden, is comprising of four parts:

- The exhibition 'Thai Herbs to the World' – demonstrates the art of Thai wisdom, particularly for the development of herb plants for medicinal purposes.
- Garden of Healthy Herbs – comprises of a wide variety of familiar herb plants, with 100% safety for use guaranteed by several researchers.
- Garden of Royal Grace – exhibits various Thai herbs and is designed especially for people with visual impairment.
- House of Pharmacy – serves as a Thai herb center with a traditional healing atmosphere.



Sireeruckhachati Nature Learning Park was certified by BGCI Botanic Garden as its conservation-oriented approach can support local, national or global conservation goals. Significantly, Sireeruckhachati Nature Learning Park is developed with the 'Universal Design' concept.



Sireeruckhachati Nature Learning Park

Aside from those who have keen interests in medicinal herb plants, Sireeruckhachati Nature Learning Park also focuses on quality facilities, a spacious location and friendly environment to facilitate elderly and disabled people in particular, as part of a strategy to serve visitors of sectors of society. Visitors can walk around the park to learn about more than 600 medicinal plant species. Medicinal plant information and photos of more than 600 medicinal plant species are available on-line by using a QR code reader application to retrieve the data. Sireeruckhachati Nature Learning Park, medicinal plant garden, provides recreation services either by self-study tour or guided tour which shows curious visitors to get more interesting data of medicinal plants. The explanation on herb's properties, morphology, and use can inform all visitors about the botanical information in a more enjoyable manner. Moreover, interested people can access the botanical information and news on the SIREE PARK E-NEWSLETTER website.

## Practical training of arborist

As we realize that the tree architecture requires specialized practice, the Faculty of Science, therefore, organized the practical training of arborist for our staff. The program was developed by interdisciplinary tree gardening and field working. The participant who passes either fundamental arborist and practical test is certified to work as a professional arborist. After this program, the 13 graduated staff were expected to work on tree thinning and cutting in Mahidol University's area appropriately.



## The IX International Scientific and Practical Conference on Biotechnology as an Instrument for Plant Biodiversity Conservation: Biotech 2021

Biotech 2021 is a knowledge forum on the topic of biodiversity conservation organized by collaboration of Faculty of Science, International Society for Horticultural Science (ISHS) and government units. This forum was joined by 90 participants from 18 countries through Cisco WebEx meeting and Video to exchange the information and insight knowledge of many topics relating to biodiversity situation such as food security crisis, genetic techniques, and habitat loss. The meeting aims to extend the opportunity for sustainable development through research and partnership between researchers.



### Beautiful green corner garden

To promote our students and staff to live in a good environment, the Division of Physical Systems and Environment has organized the beautiful corner garden contest since 2017 to encourage every work unit to improve their green space areas enhancing recreation activities. More than 3,000 m<sup>2</sup> were created to be the green area of a total 18 participating work units.





**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. The below shows the activities relating to SDG16.

## 16 PEACE, JUSTICE AND STRONG INSTITUTIONS **Peace, Justice and Strong Institution**

### Governance

Mahidol University concerns that the good governance led to the effective work and equality in the institute. The University has substantially reduced corruption and bribery in all forms. Besides, equality among staff was regulated by its support to build resilience in vulnerable situations and reduce the exposure and vulnerability to climate-related crises. Moreover, non-discriminatory laws and policies have been created to enforce the institute’s commitment to system transparency.

In all of our 6 campuses, Mahidol University is centrally governed; principally the Office of President, Mahidol University Council and the General Board of the Faculties, Department and Personnel with advice and support by the extensive network of committees, boards and organizations. We aim to achieve our mission to excel in health, sciences, arts, and innovation with integrity for the betterment of Thai society and the benefit of humankind. To be one of 100 World Class University, Mahidol University has set its vision to be recognized as a leading University in cultivating competence in human capital and advancing education and research for the country by strengthening administrative system, quality of life, environment, national competitiveness and equal opportunity of society. Our good governance and organization are driven by the following 4 strategies:



### Flagship Projects

Mahidol University has determined strategies and indicators to reach its goal as to be one of best World University by 2030. The Flagship projects were established for the purpose of driving academic and research work to respond to our 4 strategies implementation. In 2020, Flagship projects were operated according to its Objective and Key Result (OKR), as follows:

#### Flagship 1: MU-MRC and integrated researchers

The project has connected to 6 clusters of MU-MRC including the integrated and multidisciplinary researchers and multi-generation researchers. The multidisciplinary research was developed under this clustering, for example, the Development of integrated mass spectrometry technology with nuclear magnetic resonance analyzer system for medical research. The multi-generation clustering projects, such as the Study of pathogenetic mechanism of Thalassemia disease and Development of new treatment approach for Clostridium difficile.

#### Flagship 2: Flexible Education & Credit Unit Bank System

The project has driven the transformation of 16 flexible programs and establishment of Bachelor of Arts and Science in Creative Technology organized by the International College by regulation of flexible education and credit unit bank system management.

#### Flagship 3: Wisdom of Land Platform

The project aims to create the academic ecosystem via the service platform which contributes to the information exchange and connection among the stakeholders. The established ecosystem was expected to operate on Policy Advocacy, expanding of research network as well as Database documentation. In 2020, many researches have contributed to national policy such as the development of “Active School” by the Institute for Population and Social Research to be the practical policy in elementary school all over Thailand. “Interfaith Buddy” established by the Institute of Human Rights and Peace Studies was subsidized to be a national policy institute for reducing social conflict.

## Risk Management Policies

In order to carry out Mahidol University's risk management efficiently and effectively in compliance with good governance as well as management processes, to deal with any circumstances or uncertainties which may arise to cause damage and affect achieving Mahidol University objectives, risk management policies have been formulated as follows:

- Mahidol University commits to operate risk management throughout the organization according to good and universal practices by adopting standards of education quality, research studies, health services, and academic services to add value to the organization.
- All executives and staff shall build awareness of management and deal with any circumstances, either risks or opportunities, which may affect achieving objectives of the University and its work units; the management must be at an acceptable level.
- The University and its work units shall monitor and review risky situations regularly in line with the changing internal and external environment.
- The University and its work units shall consider risk management as part of regular work procedures.

### Enterprise Risk Management

Mahidol University is always aware of the uncertainty of the future changes, as well as the risk and opportunity. According to the Risk Management Policy, the University provides risk management system based on the COSO- Enterprise Risk Management-Integrated Framework (COSO ERM).

### Flagship 4.1: Research Global Talents Platform establishment

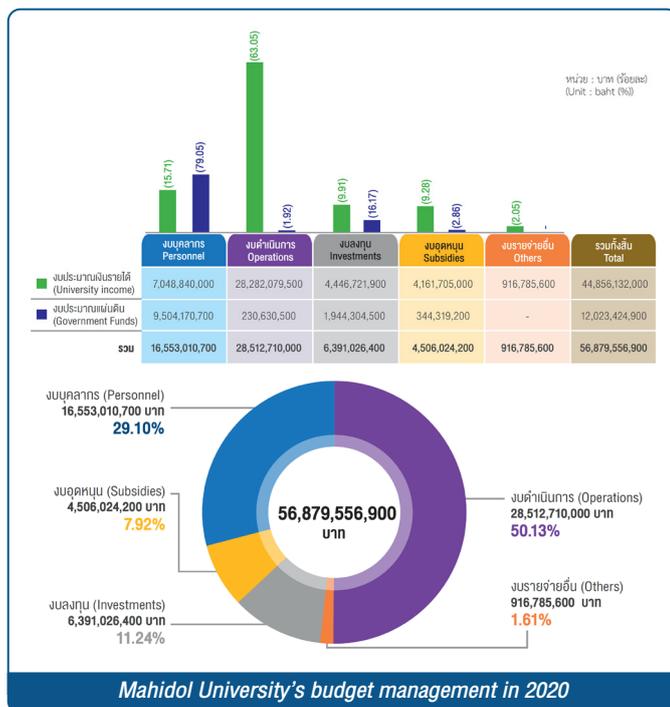
The project has connected the researchers' network through recruitment of excellent researchers and contribution of support system for the Global Talents and MU-Talents. The participants individually developed their performance via our platform.

### Flagship 4.2: Theme and Campaign Branding of Mahidol University

This project has operated on the Re-Branding of our University based on the diversity recognized survey of Brand MAHIDOL in order to create the Mahidol Logo and our image for commercial branding. Moreover, the Mahidol Endowment Fund and the short-term funding of Mahidol funding against COVID-19 crisis was launched for financial sustainability support.

## Budget management

Mahidol University, as a large organization that provides a variety of services to the public, it is crucial that the whole university is administered ethically with transparency and integrity operations in order to develop the efficiency of all our educational and other services. In academic year 2020, Mahidol University had a budget of around 56.9 billion THB of which 79.4% was received from our own income and 20.6% from support by the Thai government.



Furthermore, approximately 19.5% of all budget was allocated for implementing our strategy 4: Excellence in management for sustainable organization.



In 2020, the University identified a possible significant risk in 8 events related to corruption or conflicts of interest that person's profit linked to the public.



## The significant risk events on corruption or conflict of interest.

Event in risk	Management plans
<b>Risk level: Highest</b>	
Fraud in receiving money	Monitor and continuously control: <ul style="list-style-type: none"> <li>- Money check by committee</li> <li>- Investigate of receipt and transcript of bank account by director</li> <li>- Investigate the financial report</li> <li>- Separate the financial staff from account staff</li> <li>- Inform and alert the importance of correct form of receipt</li> </ul>
Bribery corruption	<ul style="list-style-type: none"> <li>- Organize exchange activity of the exchange about error case or good process for inform the risk of corruption event</li> <li>- Campaign the event to raise awareness and transparency institute</li> </ul>
Procurement corruption	Monitor and continuously control: <ul style="list-style-type: none"> <li>- Appropriately appoint the committee to inspect the supplies</li> <li>- Investigate the procurement detail from upstream to downstream</li> <li>- Compare all price of the same product in the market</li> </ul>
The expenditure of research project not in accordance with the plan	<ul style="list-style-type: none"> <li>- Determine to monitoring in all of research project</li> <li>- Determine to report the progression in every project</li> <li>- Not allow to balance the expenditure</li> <li>- Organize the law, regulation, and cons of corruption</li> </ul>
<b>Risk level: High</b>	
Insufficiency of laws, regulation, and new announcement	<ul style="list-style-type: none"> <li>- Set the system and monitoring the compliance by MU investigation center and committees</li> <li>- Setting of Code of Good governance</li> <li>- Determine the measurement and scoring mechanism as well as transparency of government unit</li> </ul>
Incorrect expenditure evidences	<ul style="list-style-type: none"> <li>- Inform about the finance and supplies</li> <li>- Organize the clear practical operation on website</li> </ul>
Receiving benefits in return for work duty responsible	<ul style="list-style-type: none"> <li>- Present and rise understanding about the measurement of Code of Good government according to regulation of Mahidol University and Ethics policy</li> </ul>
Loan fraud advanced pay for personal objective	<ul style="list-style-type: none"> <li>- Control the risk by monitoring of committees and provide the advance pay for only essential purpose</li> </ul>

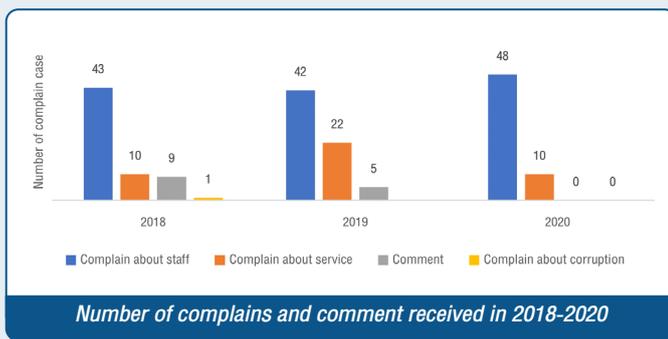
## Integrity and Transparency Assessment (ITA)

Mahidol University recognizes the importance of integrity and transparency. So, we have adopted the indicators of integrity and transparency assessment (ITA) under evaluation by the Office of National Anti-Corruption Commission. This assessment including Internal Integrity and Transparency Assessment (IIT), External Integrity and Transparency Assessment (EIT), and Open Data Integrity and Transparency Assessment (OIT) were approved with evidence-based approaches for certifying that policies and procedures are in place to support morality, transparency and impartiality. In 2020, the ITA Score of Mahidol University was 91.18 of 100, rated in A category.

Mahidol University has recognized the importance of protecting rights and safety involving human participants who take part in research conducted under the university's responsibility. The research must be conducted correctly according to the ethical principles of research in human recognized in the international standard and code of conduct set by the Office of the National Research Council of Thailand, including the Thai tradition which uphold the university research's quality to be recognized in the international level and trusted by the participants. Our student and staff, in accordance with Mahidol University Act 2007, Section 24(2) in the Mahidol University Council meeting no. 415 on 21 May 2008, the Policy of Ethics for Research in Human (2008) was set in every division inside the university that conducts the research in human that the administration meets the international standard.

## Complaints and appeals

Mahidol University, to promote anti-slavery, anti-corruption and human trafficking in its organization and supply chains has established the conflict management system which is driven by the ombudsman committees. Complaints and conflict management are regulated by the ‘Complain Management of Mahidol University B.E. 2560’ policy. All stakeholders feedback and complaints are received via online form , e-mail, complaint box, or direct contact at ombudsman committees’ office of Mahidol University. The statistics of complaints and comments from our stakeholders are annually reported online .



## Institute of Human Rights and Peace Studies

The Institute of Human Rights and Peace Studies (IHRP) is the result of a recent merger between Mahidol University’s Center for Human Rights Studies and Social Development (est. 1998) and the Research Center for Peace building (est. 2004). IHRP combines the experience and perspective both centers have to offer. IHRP is uniquely interdisciplinary and is redefining the fields of peace, conflict, justice and human rights studies, in the Asian Pacific region and beyond. The vision of the institute is “Institute of Human Rights and Peace Studies plays a leading role in Academic Enquiry and Practical Wisdom in Human Rights and Peace building”.

In 2020, the institute issued “Calling for the Thai government to adhere to human rights principles in addressing on-going confrontation”. The institute was deeply concerned over the Thai government’s violent suppression of protesters, most of whom are youth, that took place on Friday 16 October, 2020. The Institute of Human Rights and Peace Studies thus called on Thai governments to stop using force and violence to suppress peaceful protesters immediately. IHRP also called for the immediate release of those who had been arrested and for an end to the arrest of peaceful protesters and activists.

## Lean Concept: e-Budget Alert and KM project by Digital: Application

Since the challenge now is a fast-changing digital era, Mahidol University has been adopting digital and integrated management into the e-Budget Alert and its application project. The e-Budget Alert project was operated aiming to effectively monitor the budget management through the digital form of e-doc and smart device application called “Application Si vWORK”. The digital system could help to enhance the documentation efficiency either in data collection or information management. The Link share Learn developed is for data collection, documentation, share, announcement, communication, as well as receiving feedback. The budget system can be accessed through the Fund center of each faculty under ISO 27001 standardization. Moreover, the application platform was developed dependent on concept of 6S: Speed, Smart, Smooth, Slim, Sufficient Economy, and Siriraj Culture to be the new normal working in anytime and anyplace.



### Calling for the Thai government to adhere to human rights principles in addressing on-going confrontation.

The Institute of Human Rights and Peace Studies (IHRP), Mahidol University is deeply concerned over the Thai government’s violent suppression of protesters, most of whom are youth, that took place on Friday 16 October, 2020. The crackdown is a violation of the right to peaceful assembly guaranteed under the 2017 Constitution and the International Covenant on Civil and Political Rights to which Thailand is a State party.

The government’s invoking of the “severe state of emergency” in the Bangkok metropolitan area on October 15 and its extension to 13 November 2020 has intensified state powers to curb the dissenting voices and goes against the principle of proportionality. This regrettable act does not offer a way forward as it hampers prospects for constructive dialogue and peaceful conflict resolution.

The Institute of Human Rights and Peace Studies thus calls on Gen. Prayuth Chan O-Cha to stop using force and violence to suppress peaceful protesters immediately. The IHRP also calls for an immediate release of those who have been arrested and for an end of the arrest of peaceful protesters and activists.

Under the current situation where the representative parliamentary system cannot function as a platform for democratic deliberation, the government needs to provide space for people to voice their concerns. The government must address conflicts constructively by allowing all parties, especially young people, to be part of the solutions and to ensure there will be no lives lost in this on-going crisis.

17<sup>th</sup> October 2020



# COLLABORATION





The SDGs call for “a spirit of strengthened global solidarity.” Problems that cross geographies and sectors require collaboration that does as well. The below are the related-SDG17 activities.



## Partnership

### MoU/MoA

Mahidol University contributes to many partnerships throughout its faculties, divisions, and research centers, and continues to force scholarly support across the government and private sectors. We join in many active partnerships through Memorandum of Understanding (MoU) and Memorandum of Agreement (MoA) contracting with faculties, divisions, and research centers, and continue to force scholarly contributions across the government and private sectors. In 2020, we worked with 8 private companies, 3 NGOs, and 4 government units for the purpose of research collaboration, student internship, and information exchange. For example, the Faculty of Liberal Art collaborate with Restaurants Development Co.,Ltd. aiming to develop the personnel standards of Thailand’s food industry. Besides, the development and promotion of medical innovation were implemented by research collaboration of the Faculty of Medicine Ramathibodi Hospital, Thai Electrical, Electronics and Telecommunication Industries Association, and Electrical and Electronics Institute.

Number of MoU/MoA Mahidol University with partners in 2019 and 2020

Partner	Number of MoU/MoA	
	2019	2020
International institute	10	11
NGOs	3	6
Private company	12	17
Government unit	13	23



We always remain our belief that international engagement and research experience will support knowledge, proficiency and self-development of our students and staff; we keep collaboration with international organizations and governments through double degrees and joint programs in areas varying from Medicine and Public Health to Human Rights. For example, the Mahidol – Norway Capacity Building for ASEAN Scholarship was provided for our students who are faculty members of public universities, staff in university-affiliated institutions such as university hospitals, research centers and units, government officials in public sector, workforce in NGOs with strong contributions towards national economic and social development, people with disabilities, people from rural areas or disadvantage groups, including indigenous people, female citizens or displaced persons resulted from disasters and conflicts. Another, Mahidol-Liverpool Ph.D Scholarship provides a foundation training in research to enable outstanding graduates from Mahidol University to proceed to a Ph.D degree at the University of Liverpool in the UK. The Ph.D degree is in any Science subjects covered by the University of Liverpool including (i) Chemical and Materials Sciences, (ii) Environmental Sciences and (iii) Structural and Molecular Biology. In the 2020 academic year, 8 Myanmar students and 2 Thai students were provided the Mahidol – Norway Capacity Building for ASEAN scholarship and Mahidol-Liverpool PhD Scholarship, respectively.

Since 2019, moreover, the collaboration scholarships were provided to 54 double degree program students and 6 joint program students. The scholarship recipients are supported, financial and academic facilities, in order to undertake postgraduate education between Mahidol University and our partners such as International Medical College (Germany), Kyoto University (Japan), and The University of Glasgow (UK). In 2020, we have accepted 10 onsite and 1 online inbound international student and supported 3 of our students online outbound.



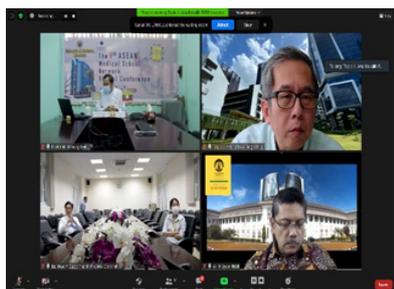
## WHO Collaborating Centre for Nursing and Midwifery Development

As a highly-recognized, academically excellent institution of nursing and midwifery in Thailand, the Faculty of Nursing (Siriraj), Mahidol University has been designated as the «WHO Collaborating Centre for Nursing and Midwifery Development» since 1996. The main purpose of the centre is to promote the improvement of education, practice, and research in nursing and midwifery. The mission of this WHO Collaborating Centre is to enhance capabilities and contribution of nurses and midwives to providing effective and comprehensive health services for individuals, families and communities. The WHO/SEARO Collaborating Centre for Nursing and Midwifery Development at Mahidol University operates within the WHO Guidelines and carry out functions to serve as a training center in nursing specialties and midwifery, strengthen research capacity in nursing and midwifery, and promote and support a partnership collaboration in nursing and midwifery education, research, and practice.



## ASEAN Medical Deans' Summit

Since 2012, the ASEAN Medical School network was established to leverage medical education and health system towards international excellence and prepared to work as one community among leading medical schools in the ASEAN region from 10 nations: Thailand, Laos, Myanmar, Vietnam, Cambodia, Indonesia, Malaysia, Philippines, Singapore, and Brunei. The aim of ASEAN Dean's Summit was to share their visions and ideas on how to collaborate among one another for the benefit of 600 million ASEAN people. In 2020, Mahidol University organized the 9th ASEAN Medical Deans' Summit on the topic of "COVID-19: Challenge and Lesson Learned with a Focus on Education" through an online platform. This summit was attended by 20 medical schools from ASEAN and China.



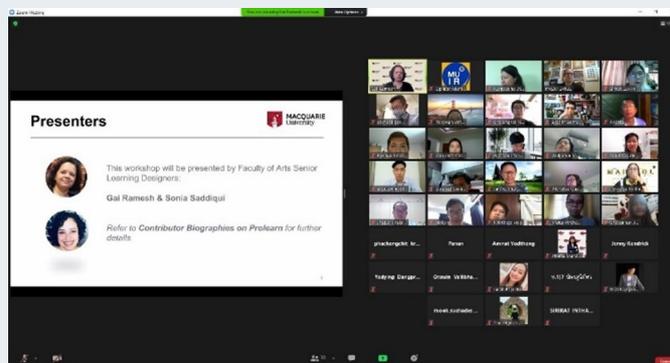
## Policy advocacy

### Policy of community empowerment for anti-cancer disease

The policy is conducted from the international conference of cancer disease by collaboration of two Mahidol University's work units: Faculty of Medicine Ramathibodi hospital and Faculty of Medicine Siriraj hospital with three partners: Faculty of Medicine, Chulalongkorn University; Faculty of Medicine and Public Health, HRH Princess Chulabhorn College; and National Cancer Institution. The promotion on empowerment of community for awareness and putting the cancer disease to be a part of national problem. The policy was prioritized into the 12th National Health Assembly Agenda.

## Improving online teaching and learning for academic's workshop

By collaboration between Mahidol University and Macquarie University under the Center for International Education (MCIE), the virtual workshop on "Improving Online Teaching and Learning for Academics" were organized with the purpose of teaching and learning activities improvement through online curriculum planning, learning design, developing basic multimedia learning, and supporting academics. As host, the online sessions were delivered via Zoom and MQ Prolearn website by Prof. Garry Falloon, Professor of STEM Education and Digital Learning, and his team in order to broaden our staff understanding on Learning Management System of Mahidol University. All of 111 participants were expected to integrate the effective approach to their work completion and online teaching and learning skills development.



**Publication and distribution**

Division of Physical Systems and Environment  
Office of the President  
Mahidol University

**Advisor**

Associate Professor Kitikorn Charmondusit, Ph.D.  
Vice President for Environment and Sustainable Development

**Editor**

Dr. Allan Sriratana Tabucanon  
Faculty of Environment and Resource Studies

**Content/Coordinator**

Sasivimon Pungpermtrakul  
Malulee Leamlaem  
Rungtiwa Buadee

**Creative Design**

Rungtiwa Buadee

**Proofreader**

Sansanee Sirilak

**Contact**

Sustainable Development Office  
Division of Physical systems and Environment  
999 Phuttamonthon 4 Road, Salaya, Nakhon Pathom  
73170 Thailand  
Phone: 0-2441-4400 Ext.1120-1125  
Fax : 0-2441-9720

