



# Kasetart University





# Kasetsart University





**Chongrak Wachrinrat, Ph.D.**  
**President of Kasetsart University**





# President's Statement

## SDG KU WAY: Sustainable Development Goals of Kasetsart University

In celebrating the 80th anniversary of Kasetsart University with the vision of being a world-class university of learning, research, and innovation leading to the sustainable development of society based on the knowledge of land, Kasetsart University is committed to develop, integrate, and elevate the quality of life, society and communities in becoming the learning society model on the basis of multiculturalism and the philosophy of sufficiency economy by allowing people to have opportunities to access different forms of knowledge, including pursuing high quality research and creative pieces of work and innovation in response to the development of agriculture, food, forestry, fisheries, veterinary science, and targeted industries of Thailand.

As the President of Kasetsart University, I am aware of agriculture, forestry, environment and education. As a consequence, policies are formulated to promote, support, and develop further climate change awareness campaign, provision of alternative energy, wastewater and solid waste management, reduction of carbon emission, green habit, and happy place under BCG Economy Model consisting of B- Bio Economy that focuses on using biological resources wisely, C – Circular Economy that considers reusing materials as much as possible. These 2 economies are under G-Green Economy that aims to solve pollution problems so as to reduce global impact in a sustainable manner. In addition, attention is paid to the transition of teaching and learning which formerly was based on the hybrid model (online and onsite). In the post-pandemic time, academic strengthening program is carried out through the measures recovering lost learning (Learning loss) caused by Covid-19 for students and the way of life of Ku-nity people who live and learn together under the preventive measures of Covid-19.

In relation to Kasetsart University policies that are put into practice, I am determined to encourage all sectors regarding faculties, offices and institutions to put the concept of Collective Actions for from transforming Green Sustainable Universities in The-Post Pandemic into practice in response to the vision and identity “to promote the knowledge of land for the well-being of the nation and the global community.” Lastly, I would like to thank all KU-nity people who work collaboratively to develop Kasetsart University. We will move forward together to the eighth decade.







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# About Kasetsart University

Kasetsart University is the first higher education institution in Thailand. It Grows up and develops into a university is "Knowledge of the Land." which is integrity and sustainable, thereby linking with agriculture, which is a basic science of the university, besides, induce the King's science, community science, and international science, which integrated to create academic lead to being a leading university to develop the country sustainably and has an internationally recognized reputation.

Kasetsart University was established in 1943, it is a small college of agriculture and forestry that is determined to create and develop human resources. It is, therefore, the historic part of the development of the country's agricultural sector. Nearly 80 years later, it has developed knowledge and developed into a fully integrated university. As a research university, at the present, Kasetsart University offers bachelor's degrees, master's degrees, and doctoral programs in a variety of fields., including agriculture agro-industry, architecture, business administration, education, economics, engineering, environmental studies, fisheries, forestry, humanities, physical sciences, social sciences, and veterinary medicine. Many years ago, Kasetsart University has become an institution serving human resources production in these programs for the nation. Kasetsart University has various campuses as follows:

1.Kasetsart University, Bang Khen, has an area of 848 rai, consisting of fifteen faculties, two colleges, one office, four offices center, four institutes, and one center.

2.Kasetsart University Kamphaeng Saen Campus has an area of 7,951 rai, consisting of five faculties, one office, two offices center, and one center. In addition, it is also the location of vital departments of the university, such as the center for Agricultural Biotechnology, Science Center and Rice Gene Discovery Unit, National Agricultural Extension and Training Center, National Agricultural Machinery Center, Kamphaeng Saen Fisheries Research Station, Kasert University Veterinary Teaching Hospital, which covers the operations of Nong Pho Veterinary Hospital, Ratchaburi Province.

3.Kasetsart University Chaloe Phrakiat Sakon Nakhon Province Campus located in Mueang District, Sakon Nakhon Province, with an area of 4,488 rai. To honor his majesty the king on the occasion of the 50th anniversary of his majesty's accession to the throne and to spread educational opportunities and develop Sakon Nakhon province as the education center of the upper northeast region 4,488 rai. Besides, it provides academic support to projects under the Royal Initiative Projects, it also is a center for progressive agricultural development. Consists of four faculties and one office consisting of four faculties and one office.

4. Kasetsart University Sriracha Campus provides teaching and learning in majors supported by economic expansion and develops the human resources in the East Coast region.

Kasetsart University Sriracha Campus provides teaching and learning in majors supported by economic expansion and develops the human resources in the East Coast region thereof increases educational opportunities in the eastern region. Consisting of five faculties and one office. It is located in Sriracha District, Chonburi Province, with an area of 199 rai.

5.Kasetsart University Suphanburi Campus Establishment Project Suphan Buri Province, located at Bang Pla Ma District, Suphan Buri Province, with a total area of 761 rai 1 ngan 74.5 square wah. Kasetsart University Council approved to support the implementation of the project under the cabinet resolution. The principles for the expansion of regional public university campuses were approved on October 8, 1996. Education started in 1999 to produce graduates with standards for academic leadership in the lower central region.





The Kasetsart University Council has set operating policies under the KU ++ Super Plus system management and has stepped up to be 6U according to the policy of the Kasetsart University Council and towards the goal of sustainable development by setting a policy that demonstrates being a leading university create value to society outside the university both nationally and globally. Consisting of Green University, Digital University, Research University, World Class University, Social Responsibility University and Happiness University, including applying the principles of sustainable development by the vision that “A world-class university of learning, research, and innovation for sustainable development based on the science of the land.” Whereby the Kasetsart University Act (BE 2558) under Section 7 and will be the main cog in building personnel and students to be aware of and responsible to the community, society and the environment according to the United Nations Sustainable Development Goals in all dimensions.

### Philosophy

Kasetsart University devote itself to the task of accumulating and developing intellectual knowledge. It thrives for the growth in academic wisdom including ethical and moral excellence. In addition, it has a responsibility to play a leading role in keeping our Thai heritage alive and to ensure that it continues to grow to enrich the civilization of the notion.

### Vision

A world-class university committed to teaching, research, and innovation leading to the sustainable development of society based on the knowledge of the land.

### Mission

Build a broad base of knowledge from innovation and transfer technology to promote socioeconomic development and enhance the competitiveness of the

### country.

Strengthen technical skills and improve the competencies of persons at all ages in order to ensure a qualified pool of labor that will meet the evolving needs of society domestically and globally. Create models of learning that improve the quality of life for Thai communities and all sectors of society.









# Location At Kasetsart University



**Bangkhen**



**Kamphaeng Saen Campus**



**Chalermphrakiat  
Sakon Nakhon Province Campus**



**Sriracha Campus**



**Suphan Buri Campus  
Establishment Project**



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# Sustainability Policy Kasetsart University

Kasetsart University aims to create people and innovation of land science to the world for sustainable development of the country. The university will apply this sustainability policy to expand the implementation of the Sustainable Development Plan by considering the balance between the three principles of sustainability, such as environmental, social, and economy. The implementation will be divided into four areas as follows:

## Basic necessity and use of natural resources and the environment

There is an effective measurement of using resources and energy, support low-carbon activities, and manage infrastructure with a focus on sustainability in various ways.

## The development of sanitation and health care

The development of sanitation and health care of personnel, students, and the general public through various activities, for example, exercise, outside the classroom activities, and public awareness. Besides, listening to feedback, suggestions, and others eliminate inequalities.

## Academic and research

Promote academic and teaching without barriers from physical inadequacy, gender, and other inequalities. Support lifelong learning by letting students be creative, create innovations to promote digital proficiency and be aware of the changes in the world.

## The mission of the university together with society.

In terms of the mission of the university together with society. The university will support research with cooperation between the university and the government, including other related parties such as surrounding communities and the needs of society.







## Eliminating poverty

Elevate income of communities and rural areas to ensure people will have equal rights to access resources and basic services in a comprehensive manner so as to solve poverty-related problems

### 1. Cricket Snack

The university cooperates with the knowledge transfer community to enhance the economy and society in Nong Ngu Lueam Subdistrict by processing food, adding value and generating additional income for the community by using farm-grown frozen crickets to be steamed, cooked and processed through freeze-drying, allowing it to preserve 97% of the aroma, color, nutritional value and taste.



### 2. Grapefruit

The Extension and Training Office Kasetsart University, Kamphaeng Saen Campus helps promote farmers who produce agricultural products to educate them on how to manage organic grapefruit plantations without waste by using fallen grapefruit or smaller than standard fruits to be processed into products such as insect repellent marinade, mosquito spray, welded grapefruit and stirred grapefruit, which can be utilized and create added value.



**ส้มโอ**  
**คัดทิ้ง**  
ทำแบบนี้ได้ด้วยนะ!!

**ส้มโอคั่วแห้ง คืออะไร?**  
ส้มโอแห้งที่ถูกแปรรูปเข้าทำอาหาร หรือขนาดผลเล็กกว่ามาตรฐาน ปกติแล้วในหนึ่งวัน จะมีปริมาณ 20-30% สามารถนำมาใช้ประโยชน์และสร้างมูลค่าเพิ่มได้ เป็นแนวทางการจัดการสวนส้มโออินทรีย์ แบบไร้ของเสีย โดย คุณเบญญา รุ่งทองสุข เจ้าของสวนผลไม้หนองสนวน

**น้ำหมักไล่แมลง**  
หมักฟองน้ำและเนื้อส้มโอผลอ่อน ผสมกับพริก และปลากะเล ใช้เป็นออร์โมนพืช และสารชีวภัณฑ์ไล่แมลง ทำจิตเพลี้ย

**สเปรย์กันยุง**  
ใช้ผิวส้มโอ ผักกาดและดอกออส ใช้ฉีดพ่นในสวน เป็นเวลา 10 วัน และสมุนไพรไล่ยุงได้

**ส้มโอเชื่อม**  
ใช้ส่วนของฟองน้ำส้มโอ เชื่อมกับน้ำตาล ได้รสสัมผัส คล้ายข้าวตาลเชื่อม

**ส้มโอกว**  
เชื่อมส้มโอ ผสมน้ำตาล และมะนาว กวนให้เข้ากัน เป็นลูกอมรสชาติหวานละมุน

โดย ชัยยุทธ พงศ์เลิศฤทธิ์ นักวิชาการเกษตรชำนาญการ  
ชำนาญด้าน พืชสวน ภาควิชาการสัตวศาสตร์

สวนเบญญาพารมเกษตรอินทรีย์  
ชุมชนบ้านสวนหนองสนวน

KU Kasetsart University



### 3. Chaplu leaf rice crackers

Faculty of Management Sciences Kasetsart University Sriracha Campus, Bupram Subdistrict, Prachin Buri Province explores career needs. As people face difficulties during the COVID-19 situation, they have organized online training to create careers for people in the community by using locally available medicinal plants to be processed into products of Chaplu leaf rice crackers and Chaplu leaf rice sprinkling powder.



### 4. Integrated Economic and Social Upliftment Project (1 Sub-District 1 University)

Training and career promotion for people in Thung Sukla subdistrict, Sriracha district, Chonburi province, with knowledge and skills to pursue a career, reduce expenditure, and generate additional income. Promote the operation of existing professional groups in the community. There is an exchange of information about the goods or products of each community. Buying and selling products allows people in the community to generate additional income.







# End hunger, achieve food security and improve nutrition, and promote sustainable agriculture

Promote agricultural products in a sustainable manner and access to nutritious food.

## 1. Synbio Total RICE

Research by Asst. Prof. Dr. Saran Promsai and Department of Microbiology, Faculty of Arts and Sciences, Kasetsart University developed a health supplement based on Thai rice with probiotic nutritional supplements that can take advantage of Thai colored rice and probiotic microorganisms into the product so that consumers can get benefits in 2 ways, both from rice and microbes. Xylo-oligosaccharides has beneficial properties on the gastrointestinal tract, prevents bowel cancer, helps absorb toxins in the gastrointestinal tract, and causes feces to contain residues, prevents gastrointestinal infections, and prevents diarrhea. It also inhibits the growth of other pathogenic bacteria, so it has evolved into a portable, and easy-to-consume form.



## Synbio Total RICE

ผลิตภัณฑ์ *Synbio Total RICE* คือนวัตกรรมสิ่งประดิษฐ์ผลิตภัณฑ์เสริมอาหารเพื่อสุขภาพ เกิดจากการต่อยอดจากผลิตภัณฑ์ข้าวไทยสีม่วงไปโอดีค ที่สามารถรับประทานจากข้าวสีม่วงได้โดยตรงและจุลินทรีย์ไปโอดีครวมเข้าไว้ในผลิตภัณฑ์ เพื่อให้ผู้บริโภคได้รับคุณประโยชน์ 2 ทาง ทั้งจากข้าวและจุลินทรีย์

ข้าวสีม่วงพันธุ์ไทยมีสารสำคัญที่ช่วยกระตุ้นการเจริญเติบโตของจุลินทรีย์ไปโอดีค คือสาร Xylo-oligosaccharides หรือ ไซโล-โอลิโกแซ็กคาไรด์ ซึ่งสาร Xylo-oligosaccharides สารดังกล่าวมีคุณสมบัติเป็นสารพรีไบโอติก ส่งผลกระทบต่อระบบทางเดินอาหาร ป้องกันและรักษาได้ ช่วยลดความเสี่ยงในทางเดินอาหาร และทำให้จุลินทรีย์ภายใน ป้องกันการติดเชื้อในทางเดินอาหาร ป้องกันท้องเสีย นอกจากนี้ยังช่วยยับยั้งการเจริญเติบโตของแบคทีเรียก่อโรคอื่นๆ จึงได้พัฒนา ให้อยู่ในรูปแบบที่พกพาง่าย สะดวกต่อการบริโภค รวมถึงสร้างองค์ความรู้ให้แก่ผลิตภัณฑ์

**รางวัลที่ได้รับ**  
รางวัลเหรียญทอง จากการประกวดในงาน "The 5<sup>th</sup> China (Shanghai) International Invention & Innovation Expo" วันที่ 15-17 เมษายน 2564 ณ นครเซี่ยงไฮ้ สาธารณรัฐประชาชนจีน

แหล่งทุน: สำนักงานการวิจัยแห่งชาติ (วช.)



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Research Infographic  
**KURDI**  
Kasetsart University  
Research and Development Institute





## 2. Hydroponic System Safe Vegetable Production Center

Kasetsart University Kamphaeng Saen Campus offers academic training, hydroponics cultivation, fertilizer mixing and practical demonstrations, as well as marketing, which is a new way to grow crops without soil but using water containing dissolved plant nutrients. As a result, the plants do not have diseases in the soil, are not contaminated with various chemicals in the soil, can grow plants very close to each other, save the planting area, thus obtaining a larger yield.



## 3. National Corn and Sorghum Research Center, Faculty of Agriculture Kasetsart University

National Corn and Sorghum Research Center with a total area of 2,589 rai is a research experimental plot that can provide irrigation water all year round. The back of the mountain is home to seed factories, providing academic services to society, transferring technology in all its forms, and apprenticing students at home and abroad in corn, sorghum, and economic agronomy.





#### 4. Bee Learning Center, or Bee Learning Center

Department of Entomology, Faculty of Agriculture, Kasetsart University in collaboration with Bayer Thai Co.,Ltd and Bayer AG Germany established Asia's first Bee Learning Center at Kasetsart University. It will be the learning center of sustainable utilization of bees and knowledge provision for people of all ages through activities in order to learn about bees and pollinators in every dimension and to conserve bees in the ecosystem for making sustainable agriculture, quality and safe products that give rise to food security including building collaborative networks of all sectors who play their roles and have responsibility to bees domestically and internationally.



#### 5. Rice Science Center

Rice Science Center is an internal agency of Kasetsart University. It performs the duty by coordinating upstream, midstream, and downstream research and development of rice varieties to achieve strength and academic excellence including seeking specific collaboration with National Center for Genetic Engineering and Biotechnology (BIOTEC) to support the operations of Rice Science Center and other operations as assigned by Kasetsart University.







## Good Health and Well-being : Ensure healthy lives and promote well-being for all people of all ages.

To generate immunity and stop the spread of diseases, support vaccine research and development.

### 1. Kasetsart University Medical Center

TKasetsart University has healthcare facilities on all campuses, providing medical care for teachers, staff, students and the general public with the mission of enhancing health, preventing disease, controlling disease and restoring health holistically, as well as providing information services and training that promotes the welfare of all people of all ages.



### 2. Local Quarantine

Kasetsart University Kamphaeng Saen Campus in collaboration with Nakhon Pathom Province set up a waiting center for COVID-19 patients and a quarantine facility in Nakhon Pathom province. Due to the COVID-19 situation where more people were infected, resulting in hospitals experiencing insufficient number of beds to treat. Therefore, in order to make treatment more accessible to patients, the university dormitory has been set up as a waiting center for patients and a quarantine facility for high-risk patients according to the standards of the Ministry of Public Health, which can accommodate a total of 360 beds.



### 3. 'KU helps to survive together' Project

Kasetsart University Sriracha Campus has brought 200 sets of rice boxes and drinking water to help those affected by the COVID-19 outbreak in the Laem Hospital area, Chonburi province. Laem Chabang Hospital has distributed it to COVID-19 patients in hospitals, field hospitals, healthcare workers, people who have been vaccinated against COVID-19, as well as those affected by COVID-19 who live in nearby communities.



### 4. Annual health check-up

The university provides health benefits for personnel with annual health check-ups. It is free of charge, since one's body is like a machine that works all the time. Therefore, a malfunction must be detected in order to repair and fix the problem in a timely and timely manner. It helps to assess upcoming health problems and prepare plans for future health problems.

### 5. Traffic and Safe Driving Training Program

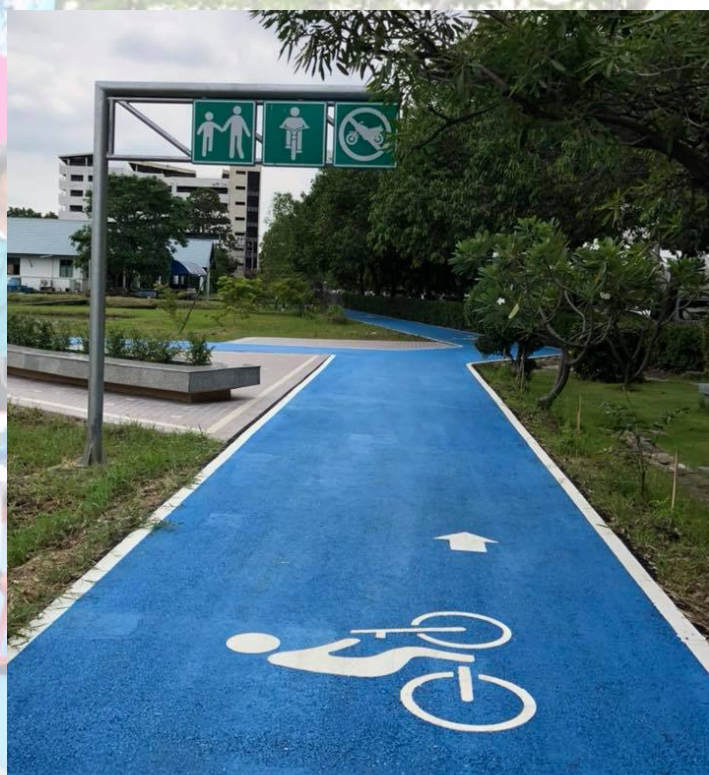
The Sakon Nakhon Provincial Transport Office organized a training program to educate students according to the 2022 New Student Driver's License Program 2022 Class 1 at Kasetsart University, Chalermprakiat Campus, Sakon Nakhon Province to enhance the knowledge of motorcycle license applicants within the school premises, raising awareness of preventing accidents that may be caused by road use.





## 6. Bicycle Use Campaign

To campaign and promote the daily use of bicycles for students, staff and the general public, promote overall physical activity on all campuses, reduce the rate of illness and risk of diseases, students and staff use bicycles to travel within the university more than 7,000 vehicles, support zero emission traffic by improving traffic routes and add bike paths within KU to accommodate more students, staff, and surrounding residents.



## 7. COVID-19 Vaccination Center at Kasetsart University Bangkheng Campus

Kasetsart University Bangkheng Campus established COVID-19 vaccination center with the support of The Royal College of Chulabhorn KU vaccination services fight COVID-19 for ku personnel, students, MHESI, and other agencies in the public and private sectors and surrounding communities to increase immunity, stimulate the body to immunize against the virus, help reduce the severity of infection and reduce mortality.







# Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Promote lifelong learning, greater and more equitable access to quality education at all levels as well as technical and vocational education and training.

## 1. Kasetsart University provides the course 'The Science of the Land for Sustainable Development'.

Kasetsart University offers the 'Science of the Land for Sustainable Development' course and promotes lifelong learning for both school-age, working-age, and elderly people who need knowledge for careers by embracing king science, community science, and international science as a guideline for sustainable development practices consisting of 21 subjects. Each set of subjects has different learning goals, focusing on practicality in order to bring the knowledge gained to the profession.



## 2. Chongrak KULAM

Kasetsart University provides online exam rooms. Due to COVID-19, the university has changed its teaching and exam format from regular to online. For access to quality education, convenient and fast, students can study and take exams when they are ready. Under the principle of 'Study without waiting a round, take exams without waiting for anyone, allowing students to follow up and study more of the material they have learned.





### 3. Vocational skills development training activities

Activities to promote the learning of life skills and career development skills for children, youth and people in Laem Chabang Municipality, to develop children, youth and citizens to have knowledge, skills and lifestyle in occupations, to train the work process skills of children, youth and citizens, to promote the creation of jobs and careers for children, youth and people to have complementary careers, and to increase income for self and family.



### 4. Nursery and Child Development Center

Kasetsart University recognizes the importance of the parenting obligations of the preschoolers of the staff, as it is the age that requires close supervision. Therefore, the Center for Nursery and Child Development has been established as a model for brain capacity development, developing all 4 aspects (physical, intellectual, emotional, social) for good quality of life in accordance with the sufficiency economy philosophy, developing babies into human resources with healthy potential, physical health, good mental health, and sustainable quality of life.







## Gender Equality

Achieve gender equality and empower all women and girls and reduce the gender gap in the labor market.



### 1. Training and career promotion program for women's groups

Vocational training and promotion program for women and people in Laem Chabang Municipality Sriracha District, Chonburi province promotes career development, creates jobs, generates income, solves unemployment during the Covid-2019 situation, develops the potential of women leaders in the community to think, co-operate, co-develop, and gain knowledge and skills to be able to use them to pursue careers to generate income for themselves and their families.



### 2. Women's roles

Kasetsart University has no gender restrictions on becoming an executive. There are many women in executive positions today. Each of them has the potential to manage, have leadership and be a broadly respected person. Kasetsart University is also pushing for a vision and creating a space for women to express their potential equally with other genders.







# Clean Water and Sanitation: Water and sanitation management Sustainable water and sanitation management and ensure access to water and sanitation for all.

## 1. Water Change Leader

Kasetsart University has a water management policy that recognizes the importance of developing, driving and enhancing the cooperation of all sectors to achieve the Sustainable Water Development Goals, supporting the effective management of water within Kasetsart University. Associate Professor. Dr. Chaloe Jarusit, Lecturer in Department of Technology and Environmental Management, Faculty of Environment, Kasetsart University has played a distinguished role in the development of concepts, operations, and has been honored with the 2021 'Water Change Leader' Certificate for Water Education, Research and Innovation from the Prime Minister's Office by the National Water Resources Agency.



## 2. Intelligent Water Allocation Scheduling and Monitoring System

Kasetsart University collaborated with the Irrigation Department operating in various areas of the community to develop iWASAM, which is a water allocation system and monitoring the results of



intelligent water delivery to be used as a tool for water management in various natural water bodies on campuses and other community areas, driven by hardware, software and users, who are responsible for importing data to estimate the water needs of the irrigation system and measure water quality and provide accurate and accurate values. It can be used to analyze the efficiency and achievement of water management well.



### 3. Reservoir, Kasetsart University, Chalermprakiat Campus, Sakon Nakhon Province



In order to prepare basic utilities, Kasetsart University, Chalermprakiat Campus, Sakon Nakhon Province has cooperated with the Irrigation Department to excavate water retention basins for the public benefit. It has an estimated capacity of 1,000,000 cubic meters to store water for use on campus, as well as a learning center on various types of water resources, and has a policy to establish a system for transporting water from the Sakon Nakhon Basin for use in various areas to be as thorough and efficient in many areas as well as helping farmers in agriculture, freshwater fisheries, and as a source of knowledge dissemination.



### 4. Kasetsart University Kamphaeng Saen Campus produces 100% self-service tap water

Kasetsart University Kamphaeng Saen Campus transports water from the Srinakarin Dam. It is transported through an irrigation canal into a pond (Pond 1), which is the main pond located within the university's grounds. The capacity is approximately 7,000 m<sup>3</sup> and the water at Pond 1 has been used to produce tap water for its own use, with the installation of a water supply system called 'Fast Sand Filtration System', which is an efficient system that allows the university to use 100% of its own produced tap water. Stormwater wells have been dug for use in various activities both on campus and can be distributed to the agencies that make the agreement, as well as neighboring communities and villages, to increase access to clean water of standard quality and to solve the problem of water scarcity.





## 5. The Nam Sai Jai Bampen

The Nam Sai Jai Bampen activity is an activity that Kasetsart University continually organizes every year by allowing students to participate in the conservation of water resources, soil and the environment within Kasetsart University in every campus. There are service activities such as collecting waste in water sources, collecting samples for water analysis to create a beautiful scenery within their study area. In this regard, the arts and sciences related to the lessons are applied to be useful in activities such as water quality measurement and analysis, composting from waste, making liquid fertilizer, studying the ecology of urban animals, etc.



## 6. Weir construction activities in Lampang Province

Kasetsart University, in collaboration with the Forest Research Center and Forest Science Research Training Station, participated in the weir construction activity in Lampang Province organized by the cooperation of many sectors. The benefit of building weirs is to reduce erosion of sediment and material flowing downstream. This makes the water quality less contaminated before and after and also reduces the severity of forest fires, allowing the nature to operate in a sustainable process that can be utilized. Villagers near water sources have access to water for agriculture and wildlife throughout the year.





# Water and sanitation management

Increase of the share of renewable energy in conjunction with energy saving policy.

## 1. Electric boats for water transportation and tourism

This research is the work of Assoc. Prof. Dr. Yodchai Thiapern and the Department of Marine Engineering, Faculty of International Commerce, Kasetsart University Sriracha Campus. Funded by kasetsart university grants in collaboration with the Electricity Generating Authority of Thailand to build a prototype boat to develop water tourism in Bangkok using solar energy, which SS GREEN boats have been used in The Saen Saeb Canal, and KU GREEN 2 uses tourist services at Klong LadMayom Floating Market to help reduce wave and noise pollution. No burning and soot, exhaust fumes from oil, save energy and reduce environmental impact.



## 2. Kasetsart One research vessel

Kasetsart University undertakes non-stop renewable electricity projects by attaching solar panels to generate electricity on the Kasetsart One research vessel, which will help save fuel and reduce greenhouse gases. It is the only marine research vessel of Thai higher education institutions, has the potential to research in the Gulf of Thailand and throughout the EEC area, it is utilized both in the country and internship projects, training students for specialized activities, etc. In addition, all educational institutions are available.





### 3. iGEAR cafe' & innovation

Innovation and engineering building with indoor coffee shop of the Faculty of Engineering, Kasetsart University, Kamphaeng Saen Campus, where solar cells are used as renewable energy in part of the store. It saves electricity bills and saves the world's energy consumption, and the interior of the store focuses on crafting from waste materials within the faculty.



### 4. Electric Mopeds

Kasetsart University focuses on environmental conservation, reducing emissions, and supporting alternative energy consumption to create a good environmental society. The company has adopted an eco-friendly electric moped, supporting the use of floating solar electricity for operational activities. In addition to reducing costs in the agency, it is also the conservation of energy and natural resources in the field of sustainable clean and environmentally friendly energy.







# Decent Work and Economic Growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

## 1. KU Virtual Job Fair & Education 2022

Kasetsart University Bangkok Campus organized the Virtual Job Fair & Education 2022 online due to Covid-19, bringing together more than 41 leading companies to discuss and advise students through the VDO Room and be able to chat with the company's HR immediately. You can apply for jobs immediately from a variety of positions and have the opportunity to choose the right one for yourself.



## 2. Guide Training Program

Tourism promotion activities to develop youth in Bu Pram subdistrict, Prachin province to become tourism communicators. Present the highlights of tourist attractions within their own communities by teaching and creating outreach videos. This creates more income from tourism and develops the community by using the highlight of tourist attractions in the community for good.



## 3. Entrepreneurship Preparation Program

Kasetsart University, in collaboration with leading national technology companies and associations, organized the 'K Unicorn Hunt for Green Unicorn' online activity via Facebook Live to educate businesses and inspire entrepreneurship for Kasetsart University students or those interested in having national tech companies share their experiences and training in technology, success paths, working atmosphere in leading technology companies.





#### 4. University to Sub-District Project (U2T)

Kasetsart University organized a demonstration of community development innovations to raise the economic and social levels of the district sustainably. Chuan, Cheque, Shim, Shop, Share Outstanding Products U2T KU to sustainably enhance the economy and society of sub-districts (Integrated Economic and Social Upliftment Project 1 Sub-district 1 University) at Chakpan Pensiri Building, Kasetsart University, Bangkok.



#### 5. Market Development Project Product Identity and Creative Tourism Route

Nong Kham Subdistrict, Sriracha District, Chonburi Province organized the activity of creating creative tourism routes in order for the community to earn more from tourism by designing one-day trips according to the various places available in the board game, enhancing marketing skills, connecting community networks, creating product identities that can generate income for the community in order to create and develop tourism upgrades.



#### 6. Social Sports Science Project

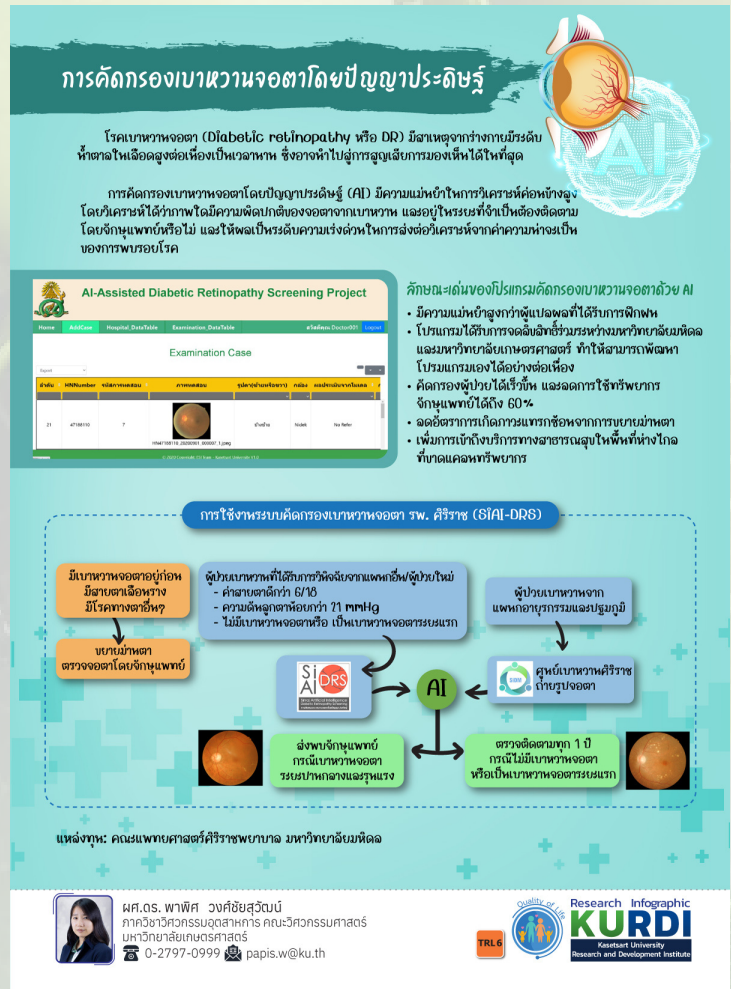
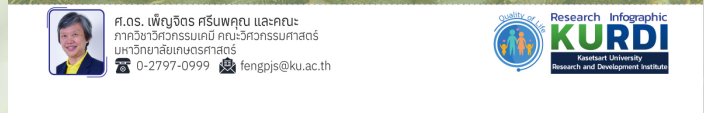
The Faculty of Sports Science, Kasetsart University has organized the Social Sports Science (CSR) program to teach healthy massage to villagers and communities at Bang Sai Pa Subdistrict. Banglen District, Nakhon Pathom Province, to provide skills and knowledge, health promotion and treatment for illnesses. It can also be used for careers, generating income for the family.





This research is the work of Prof. Dr. Penjit Srinopakun and the Department of Chemical Engineering, Faculty of Engineering, Kasetsart University, producing bio-based lubricants from black soap oil and other vegetable oils that are naturally biodegradable. It is produced by modifying the chemical structure of natural extracted oils to improve their chemical and physical properties, use them as the base lubricant for industrial hydraulic engines, replace imports of petroleum products from abroad, increase the value of Agricultural Products of Thailand, and as new products can be expanded to commercialization.

It is a screening program, analyzing which images have diabetic retinopathy abnormalities and whether they are in a phase that needs to be monitored by an ophthalmologist. The result is a degree of urgency to forward the analysis from the probability of finding a lesion. This makes patient screening faster, with relatively high accuracy, reduces ophthalmologist resource consumption by up to 60% and increases access to public health services in remote, resource-deprived areas. This research is owned by Asst. Prof. Dr. Papis Wongchaisuwat, Department of Industrial Engineering, Faculty of Engineering, Kasetsart University with support from Siriraj Nursing School of Medicine.





### 3. SOS KPS System

Kasetsart University Kamphaeng Saen Campus has established the SOS KPS system for services to staff and students. In case of an emergency, you can take a photo, share the crime scene, enter the QR code, and send the image and location to the security unit, which can arrive at the scene in just 2-5 minutes and continue to provide online repair notifications.



### 4. FENTO Educational Robotics

FENTO is an educational robot for the teaching and learning of children of all levels, designed in accordance with the guidelines of science, robotic computation as a medium of logical learning, computational planning, and introductory programming, practicing touch-by-touch programming by command labels using robotic principles seen by cameras to read symbols to control robotic functions, selecting and defining various symbol catering patterns. It is a concrete program used to control the response behavior of robots. The program is available in multiple languages, divided by age from preschool to high school, according to the Ministry of Education's Computational Science Guidelines. This research is the work of Assoc. Prof. Nattawut Kwankaew, Department of Electrical Engineering, Faculty of Engineering, Kasetsart University. It is funded by Kasetsart University.

## FENTO รุ่นขนตเพื่อการศึกษา

FENTO เป็นหุ่นยนต์เพื่อการศึกษาสำหรับการเรียนการสอนของเด็กทุกระดับ ออกแบบขึ้นตามแนวทางของ วิศวกรรมศาสตร์ โดยหุ่นยนต์เป็นสื่อในการเรียนรู้เชิงระบบ เชื่อมโยงความรู้ทางคณิตศาสตร์ และกลไกการเคลื่อนที่ การเขียนโปรแกรมแบบบล็อกโค้ดได้ด้วยการใช้คำสั่ง โดยให้หุ่นยนต์เห็นได้ด้วยการมองเห็น (Machine Vision) ในการอ่านสัญลักษณ์ เพื่อควบคุมการทำงานของหุ่นยนต์ การเลือกและการกำหนดรูปแบบ การจัดเรียงสัญลักษณ์ต่างๆ เกิดเป็นโปรแกรมเชิงตรรกะ ที่ใช้ควบคุมการทำงานของหุ่นยนต์

แผงวงจรประมวลผล 32 บิต, พลังงานจาก SD RAM, SD Card และโมดูลเชื่อมต่อ Bluetooth BLE

Power Bank

ระบบแปลงพลังงานเป็นเสียงพูด หรือวงจรรวม

ชุดมอเตอร์ขับเคลื่อน และตัวควบคุม

กล้องถ่ายภาพและวิดีโอ ความละเอียด 800x600 พิกเซล

ลำโพง

LED Matrix แบบ 7x7

โมดูลเชื่อมต่อ Wi-Fi

ตัวประมวลผลและหน่วยความจำ

**โปรแกรมมีลักษณะ-ลักษณะ**

เลือกภาษาโปรแกรมได้หลายภาษา แบ่งตามอายุตั้งแต่เด็กก่อนวัยเรียน ถึงมัธยมศึกษาตอนปลาย ตามแนวทาง วิศวกรรมศาสตร์ของกระทรวงศึกษาธิการ

**เทคโนโลยีหลักของ FENTO**

- Machine Vision : หุ่นยนต์สามารถมองเห็นได้เหมือนมนุษย์โดยให้กล้องถ่ายภาพ
- Text-to-Speech : หุ่นยนต์พูดได้ตามข้อความที่ป้อนเข้าไปตามป้ายคำสั่ง
- Internet of Things : เชื่อมต่อกับเครือข่ายอินเทอร์เน็ต WiFi
- April Tag : ป้ายคำสั่งสำหรับงานที่ต้องการความแม่นยำสูง ทำขึ้นได้โดยใช้เครื่องพิมพ์ทั่วไป
- Bluetooth : เชื่อมต่อกับอุปกรณ์เคลื่อนที่โดยใช้ Bluetooth

FENTO Robot Core Technology:

Machine Vision: Robots can be seen like humans using a camera.

Text-to-Speech: The robot spoke as the message pounded through the command sign.

Internet of Things: Connect to an Internet network via Wi-Fi

April Tag: Command code labels for tasks requiring high accuracy are made using conventional printers.

Bluetooth: Connect to a mobile device using Bluetooth



ดร.ณัฐวุฒิ ขวัญแก้ว และคณะ  
ภาควิชาวิศวกรรมไฟฟ้า คณะวิศวกรรมศาสตร์  
มหาวิทยาลัยเกษตรศาสตร์  
โทร: 0-2797-0999 ต่อ 1522 Email: nkg@ku.ac.th

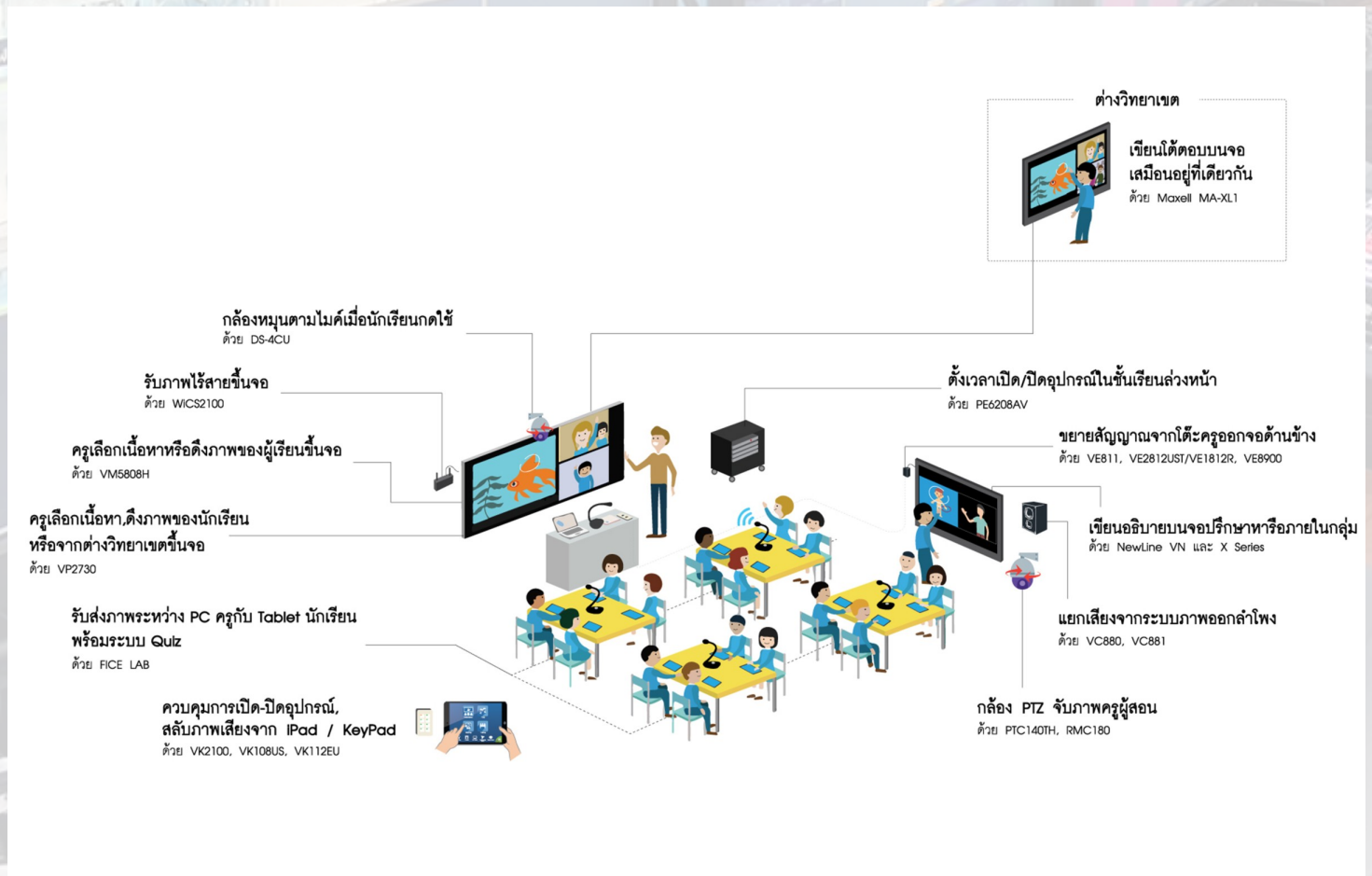


Research Infographic  
**KURDI**  
Kasetsart University  
Research and Development Institute



## 5. Smart Classroom

Classrooms focused on digital instruction, equipped with state-of-the-art technology to help promote more complete learning and substance between learners and instructors. Learners can access learning resources from anywhere by simply connecting to the internet, and instructors can insert additional teaching materials as well to adapt to the new normal and reduce congestion from entering the university.







## Reduced Inequality

Reduce inequality, foster equity in economy, society, and education

**1. Scholarships:** Kasetsart University offers scholarships for undergraduate students who are in short supply, are well-behaved, have a good academic interest, provide support and support to students to have the opportunity to study successfully according to the following types of scholarships:

1. University Scholarships
2. The scholarship celebrates His Royal Highness Prince Dipangkorn Rasmijoti
3. 1 university scholarship, 1 scholarship
4. Good Study Award 'Bhumibol Scholarship'
5. Education Loan Fund



## 2. The project to promote and support the development of learning for children and youth in the wilderness.

It is a project under the royal initiative of Her Majesty Thep Rattana Ratchasuda in collaboration with Kasetsart University to develop a plan for the development of children and youth in the wilderness so that children and young people can be given equal opportunities to study and develop among others, have a good quality of life, be able to develop themselves and contribute to the development of society and the nation by using video archives to educate teachers, and have a series of reading and writing exercises in Thai for teachers to use in teaching. There are also experts who provide online or on-site consultations with teachers.





### 3. Campus facilities for disable

Kasetsart University provides care and assistance to people with disabilities who come to school and contact the government for convenience, encourages all groups of people in society to enjoy equal rights with basic amenities including ramps, restrooms, parking spaces, signs and signs by improving the space and facilities for the use of various building and pedestrian areas, as well as designating parking spaces for people with disabilities and elderly people within all kasetsart campuses.







# Make cities and human settlements inclusive, safe, resilient, and sustainable.

Management to elevate cities and communities, providing green public spaces to achieve sustainable safety

## 1. Student pedestrian use Kasetsart University

Kasetsart University improves the roads in the teaching and learning district to be WALKING STREET, improves the surrounding landscape to have a beautiful, shady atmosphere, while adding running paths and sitting areas to promote health and exercise and use pedestrian walkways along teaching and learning facilities, reducing traffic jams, air pollution and noise that will affect the hygiene of students, staff, and reduce accidents within the school district.



## 3. Laem Phak Pai Environmental Research and Development Project

His Majesty the King has asked Chai Pattana Foundation, RDPB Office, Irrigation Department, and Kasetsart University to jointly study environmental solutions related to solid waste and wastewater in the community at Laem Phak Bia Subdistrict, Ban Laem District, Phetchaburi Province, using natural natural treatment to achieve ecological abundance in mangrove forests, animal diversity, use as exhibition venues and environmental academic works, and generate income for the community.



## 2. Welfare Bus

Providing free-of-charge welfare buses with tram and electric bus to provide public services for the transportation of students, personnel, and visitors to ku departments to be convenient and safe, there is a door-to-door service that can accommodate users of all age groups and physical conditions (Universal Design), including the elderly, disabled and children, making the transportation of students, personnel from the entrance and exit gates or various places more convenient.





#### 4. Museum and Agricultural Culture

Bureau of Museums and Agricultural Culture Kasetsart University organized an exhibition telling the story of the Thai way of life and the agricultural way for livelihoods, showcasing tools and utensils, Thai wisdom, Thai houses, Thai kitchens, floating markets, land markets from the rural way of stepping into modern urban ways, changing Thai ways and living, learning about the culture and livelihoods of Thai people related to agriculture in order to preserve the cultural heritage of Thailand.



#### 5. Somromkonkrung Park @Thung Bangkhen

Somrom Park is a new model garden on approximately 2 rai of land, set up for growing edible species as a food source for urban residents interested in growing trees for household use, mixed planting of various edible plants, no separation of plots, no destruction of existing plants, making plants naturally dependent on each other. The park, in addition to enhancing food security, is also a great addition to food security. It also enhances green space in urban areas. It creates shadiness and helps absorb carbon dioxide and filters dust in urban areas, as well as preserving plant genetics.





# Responsible Consumption and Production: Ensure sustainable consumption and production patterns

Achieve better quality of life according to production plans and consumption under restricted resources efficiently.

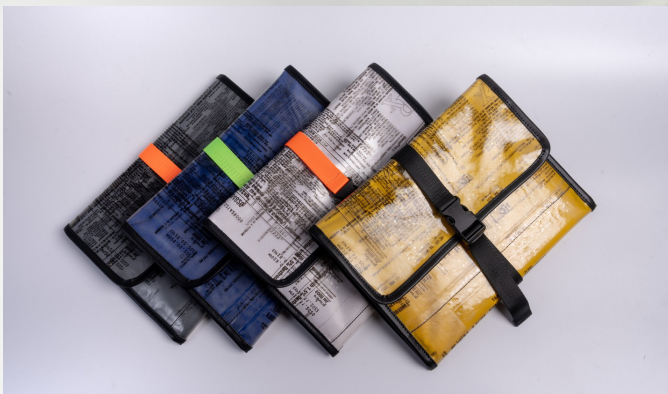
## 1. IVL, in collaboration with Kasetsart University, creates learning in waste sorting and recycling waste management.

The research at Qualy, in collaboration with TPBI Group and Vgreen KU, uses plastic recycled from foil bag packaging or sparkling bags. This is usually waste that is not recycled into a free-form potted design. There is no need to water often because it is a self-watering system. It is wisdom that does not rely on electricity, saving time to take care of the plants.



## 2. Green bags from dialysis bags

This research is the work of Assoc. Prof. Singh Intrachooto and the Faculty of the Center for Environmental Design, Faculty of Architecture, Kasetsart University. Dialysis bags are discarded in waste up to about 1 million leaves per month, difficult to decompose because they are made of high-quality plastic, clean, thick and soft, with strength equivalent to cowhide, so they are used as 'bags' under the brand name 'Scarp Shop', chosen as a part of the bag for providing nutrients to patients and only from patients who do not have communicable diseases. It has been used through various processes to ensure cleanliness and safety, reduce waste plastic from used dialysis bags, reinvest them, increase patient income and reduce environmental problems.





### 3. Organic Waste Composting Machine

Dr. Lakkhana Benjawan and the Faculty of Researchers, Center for Research and Experimental Plantation, Faculty of Agriculture Kamphaeng Saen Kasetsart University is the developer of an organic waste composting machine, used with organic waste that is easily decomposed, odorless, environmentally friendly, and reduces waste formation and pollution. In particular, more than 50% of organic waste is disposed of unproductively by using organic waste to make fertilizer for benefits and as part of integrated solid waste management.



### ผลิตภัณฑ์เป้าหมายที่เป็นตัวแทนอุตสาหกรรม 5 กลุ่ม



ประยุกต์ใช้กับผลิตภัณฑ์หมุนเวียนทุกประเภท ทั้งที่เป็น B2B และ B2C  
มุ่งเป้ากลุ่มอุตสาหกรรมเป้าหมายหลัก คือ 1.Agri-Food 2.Building Material  
3.Plastic 4.Packaging 5.Fashion,Lifestyle

\*ยังไม่พิจารณา "สินค้าประเภทบริการ" ที่มีการออกแบบธุรกิจภายใต้แนวคิดเศรษฐกิจหมุนเวียน



### 4. CIRCULAR MARK, CIRCULAR ECONOMY IN ACTION

Kasetsart University joins hands with the Thai Environment Institute (TEI) together with its partner agencies, to make history for Thailand in developing environmental labels for renewable products 'CIRCULAR MARK' for the first time in the world. For labeled products, 'CIRCULAR MARK' can meet the needs, get trending consumers or green line buyers who are looking for environmentally friendly products. Since the product is identified as a renewable product, it takes into account the turnover of materials, is environmentally friendly, and contains recommendations for sorting waste as well as collecting waste for recycling.







## 5. Bag loop bin

Kasetsart University has participated in the 'loop' project in collaboration with the public sector, private sector, civil society to manage plastic and waste sustainably by setting up a 'loop bag' for students, staff and the public to dispose of clean plastic bags and packaging to be recycled back into bags from recycled plastic pellets. In addition, the bags and plastic film packaging donated will be worth 5 baht per kilogram. The project will also be awarded to the Rare Sea Creature Rescue Center for use in rescue missions for injured marine animals.



## 6. Green Roofs for Friends Volunteer Foundation

Kasetsart University participated in the Green Roof Project, a project to collect and recycle used beverage boxes to be used as roof sheets for the construction and repair of homes and shelters for natural disaster victims and communities that have suffered. The university supports participation in reducing waste, reducing carbon dioxide, and being socially responsible, so used drink box pick-up points have been installed on campus and surrounding communities to be recycled into roof sheets and donated to the Friends of Hard Times Volunteer Foundation for the benefit of society.







# Climate Action: Take urgent action to combat climate change and its impacts.

Preparedness and awareness-raising on global climate change.

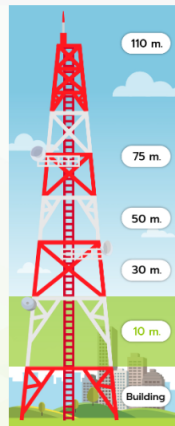
## 1. KU TOWER

Kasetsart University received the 'Near-Surface Meteorological Station and Air Pollution or KU TOWER' from the Institute of Water Resources Information (Public Organization) under the Memorandum of Cooperation titled 'Development of Technologies for The Exploration, Analysis and Processing of Water Resources and Climate Management Data'. It is Thailand's first research station to study the influence of atmospheric matter on near-surface meteorological characteristics in urban areas covering the vertical atmosphere. Weather forecasting uses vertical weather measurements from KU TOWER to accurately calibrate weather forecasts from WRF. KU TOWER has a daily online on-campus air dust reporting system so that students, staff and communities can know PM 2.5 values.



### KU TOWER

ข้อมูลจากสถานีตรวจวัดอุตุนิยมวิทยาใกล้ผิวดินและมลสารทางอากาศ คณะสิ่งแวดล้อม มหาวิทยาลัยเกษตรศาสตร์



#### ระดับความสูง : 10 m.

ข้อมูลอุตุนิยมวิทยา

|          |                     |                             |                           |
|----------|---------------------|-----------------------------|---------------------------|
| Wind     | speed<br>1.4<br>m/s | direction<br>48.5<br>degree | Temperature<br>30.9<br>°C |
| Humidity | 80.8<br>%           | Pressure<br>1006.4<br>hPa   |                           |

#### รายงานคุณภาพอากาศ

| PM2.5                    | PM10                     | PM2.5                    | ก๊าซโอโซน (O <sub>3</sub> ) |
|--------------------------|--------------------------|--------------------------|-----------------------------|
| ค่าเฉลี่ย 24 ชม. (µg/m³) | ค่าเฉลี่ย 24 ชม. (µg/m³) | ค่าเฉลี่ย 24 ชม. (µg/m³) | ค่าเฉลี่ย 24 ชม. (ppb)      |
| 9                        | 22                       | 24                       | N/A                         |
| ระดับ: ดีมาก             | ระดับ: ดีมาก             | ระดับ: ดีมาก             | ระดับ: ดีมาก                |

## 2. KU Go Green Electric Welfare Bus

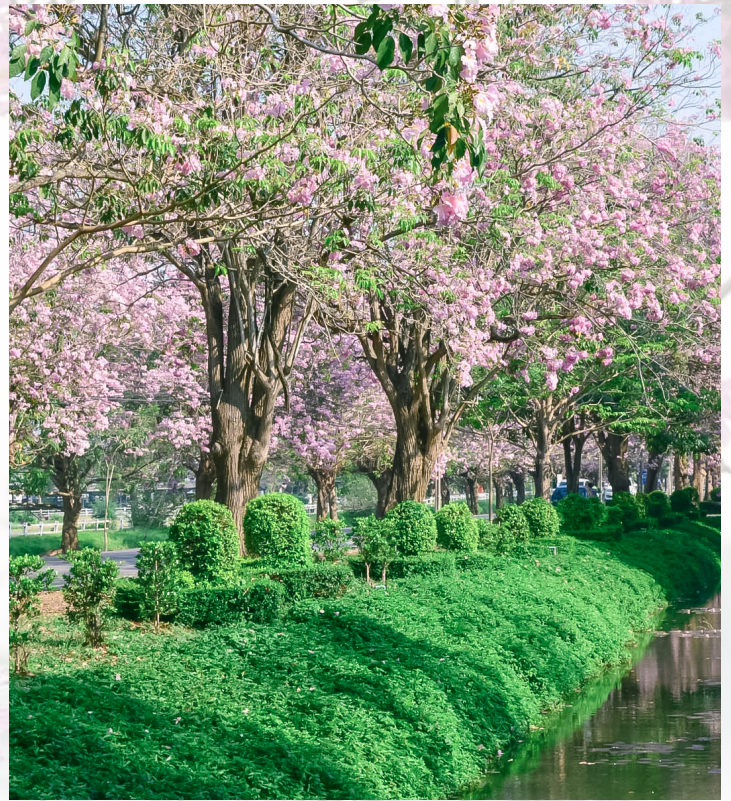
Kasetsart University provides welfare bus services in the internal electrical system Kasetsart University KU Go Green in accordance with the development policy to become a green university by implementing the transformation of welfare bus service from diesel engine to electrical system in order to manage environmentally friendly transportation system, save energy and costs, reduce air pollution and noise, create an environment conducive to teaching and learning. With parking signs that can inform the route and running of the car in real time, it is available to staff, students, and the general public to use the campus commuters happily and environmentally friendly.





### 3. KU Forest for Life

Kasetsart University encourages all sectors to contribute to reducing greenhouse gas emissions and creating a sustainable environment for the country and the planet. Kasetsart University Kamphaeng Saen Campus increases forest areas by planting nectar pink trees on both sides of the road within the Kamphaeng Saen campus. It is about 3 km long, which helps to block strong winds and provide shade to the campus, and is registered as a 'heritage of the land'. Today, the tree continues to grow and gives beautiful flowers every year on the campus.







## Life Below Water

Conserve and sustainably use the oceans, seas, and marine resources for sustainable development.

### 1. KU Trash Sweeper V3

Jet floating garbage collection vessels are designed to be environmentally friendly, battery-powered with solar cells, do not release pollution to water bodies while in use, can collect waste in water bodies both in fresh water and at sea, reduce manual labor problems, and waste problems affecting industries related to seafood, marine and coastal tourism. This research is the work of Asst. Prof. Dr. Suchila Polrueng and Department of Environmental Engineering, Faculty of Engineering, Kasetsart University. It is funded by Kasetsart University.



### เรือเก็บขยะลอยน้ำชนิดไอพ่น KU Trash Sweeper V3

เรือเก็บขยะลอยน้ำชนิด ไอพ่น KU Trash Sweeper V3 ควบคุมด้วยรีโมทคอนโทรลจาก ระยะไกล เรือมีขนาดกระทัดรัดเพียง 0.9 x 1.0 x 0.27 เมตร น้ำหนักเรือ 77 กิโลกรัม เคลื่อนที่ได้ 360° ตัวเรือประกอบด้วยวัสดุอะลูมิเนียมเกรด 304 มีความแข็งแรงทนทานต่อแรงกระแทก ระหว่างที่เดินเรือทิ้ง 2 ข้างเป็นช่องเปิดโล่ง เพื่อสามารถใส่ ตะแกรงหรือตาข่ายเพื่อเก็บขยะ โดยไม่ทำให้เปิด ป้องกันขยะหลุดออกไป ซึ่งสามารถบังคับการทำงาน ด้วยรีโมทคอนโทรลได้เช่นกัน

ด้านท้ายของหุ่นเรือแต่ละฝั่งมีการติดตั้งมอเตอร์เจ็ท เพื่อใช้ขับเรือกลับเคลื่อนเรือ ลักษณะเดียวกับเจ็ทของ ก้าวคือ ใบพัดกับเคื่องจะดูดน้ำขึ้นไว้เพื่อปล่อยน้ำทิ้งสองข้างภายในพื้นที่แอ่งทำการสวบหาเข้าทางช่องเปิด ด้านหนึ่งซึ่งมออยู่ใต้ฟ้า และพลิกตัวให้ขยะจากปลายเปิด อีกด้านหนึ่งของท่อเพื่อสร้างแรงดันไหลกับเคลื่อนลำเรือ

คุณสมบัติที่สำคัญของเรือ KU Trash Sweeper V3

- บรรทุกขยะได้ปริมาณสูงสุด 77 กิโลกรัม
- ใช้พลังงานไฟฟ้าจากแบตเตอรี่ร่วมกับโซลาร์เซลล์
- สามารถชาร์จไฟฟ้าได้จากบ้านเรือน แผงโซลาร์เซลล์แสงอาทิตย์
- เป็นมิตรต่อสิ่งแวดล้อม ไม่ปล่อยมลพิษสู่แหล่งน้ำ
- ใช้ได้ให้ทั้งน้ำจืด และ น้ำทะเล
- ใช้งานได้ใต้น้ำลึกอีกหลายเมตร และบริเวณใกล้ชายหาด ที่ลึกเพียง 0.2 เมตร

แหล่งทุน: สำนักงานการวิจัยแห่งชาติ

ศส.ดร.สุชีลา พลเรือง และคณะ  
ภาควิชาวิศวกรรมสิ่งแวดล้อม คณะวิศวกรรมศาสตร์  
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Research Infographic  
**KURDI**  
Kasetsart University  
Research and Development Institute

### 2. Marine Waste Management

The Faculty of Fisheries, Kasetsart University has prepared practical guidelines for the management of marine waste in fishing vessels and local fishing communities in cooperation with the Department of Fisheries. The Ministry of Agriculture and Cooperatives under the project strengthened the management of marine waste on local fishing vessels and fishing households for sustainable reduction of marine waste. It produces short films and posters to educate and campaign for sustainable marine waste management.





### 3. Betta breeding and breeding techniques

The Faculty of Fisheries, Kasetsart University, and the Department of Corrections jointly promote vocational training, transfer knowledge, technology to inmates who are nearing sentencing, increase opportunities, and apply the knowledge gained to further their careers by providing training courses on the cultivation and breeding techniques of betta fish in order to be colorful according to their needs in order to generate income and guide the career after parole.



### 4. Research concrete mixed from bumblebee shells

Research by Asst. Prof. Dr. Jintana Salaenoi and Faculty of Research, Department of Marine Sciences, Faculty of Fisheries University, Kasetsart, which is funded by research grants, Kasetsart University. Therefore, we have come up with a way to get rid of bumblebee shells by using shell carcasses as ingredients in concrete production, concrete products such as chairs, plant pots, walkways are one way to reduce waste volume, make the most of resources, help eliminate organic waste, reduce the need for landfill space and reduce environmental pollution problems, can be done in households or communities to be built into auxiliary occupations, and also add value to shells.

## คอนกรีตผสมจากเปลือกหอยแมลงภู่

หอยแมลงภู่เป็นสัตว์น้ำเศรษฐกิจที่หาจับได้ทั่วไทย และมีคุณค่าทางโภชนาการสูง สามารถนำมาแปรรูปเป็นผลิตภัณฑ์ได้หลากหลาย จากการบริโภคที่มากเกินไปทำให้เกิดของเสียจำนวนมาก วิธีการกำจัด เช่น การนำไปถมที่ซึ่งก่อให้เกิดมลภาวะ ส่งกลิ่นเหม็นและเป็นแหล่งเพาะเชื้อโรค หากนำไปฝังกลบจะทำให้ดินสูญเสียความชุ่มชื้นจากย่อยสลายได้ยาก

คณะผู้วิจัยจึงได้เสนอแนวทางไม่ให้นำเปลือกหอยแมลงภู่เหลือทิ้งมาใช้เป็นส่วนผสมในผลิตภัณฑ์คอนกรีตชนิดต่างๆ เช่น เสาอิฐ กระถางต้นไม้ แผ่นทางเดิน ซึ่งช่วยลดปริมาณขยะ และยังสามารถนำกลับไปใช้กับเปลือกหอยที่เหลือทิ้ง

แหล่งทุน: ทุนอุดหนุนวิจัย มท.

### การทำให้อิฐคอนกรีตผสมจากเปลือกหอยแมลงภู่

- แยกสิ่งที่เป็นเนื้อเยื่อจากเปลือกหอย และนำไปล้างทำความสะอาด
- นำไปบดแบบเปียก ให้อยู่ขนาด 0.5-1 ซม.
- ตุลกละเล้าใช้เท่ากับอัตราส่วนน้ำให้แห้งหรือแห้งเกินไปทิ้งไว้ 20-30 นาที
- เทส่วนผสมลงในแบบใช้ความสูง 5 ซม. และวางโครงสร้างลงไปในหลุมจากนั้นเทส่วนผสมที่เหลือลงในแบบ
- ทิ้งไว้ 1-2 วัน จึงสามารถแกะแบบได้

### การใส่ปุ๋ยอินทรีย์

- เปลือกหอยแมลงภู่ที่เหลือทิ้งสามารถนำมากดแทนขี้เถ้าบางส่วนได้
- ช่วยกำจัดขยะอินทรีย์ ไม่ให้เป็นมลพิษต่อสิ่งแวดล้อม
- สามารถทำได้อเนกวิธีเรียนรู้เรื่องชุมชน
- ต่อยอดเป็นอาชีพเสริมได้

อัตราส่วนผสม: ทรายหยาบ: ดิน: เปลือกหอย: น้ำ 20:30:10:30:10 กิโลกรัม

เปลือกหอยแมลงภู่บด ขนาด 0.5-1 ซม.

ผศ.ดร.จันทนา สและน้อย และคณะ: ภาควิชาวิทยาศาสตร์ทางทะเล คณะประมง มหาวิทยาลัยเกษตรศาสตร์ 081-207-0050 ffrsrd@ku.ac.th

TRL 9

Research Infographic KURDI Kasetsart University Research and Development Institute



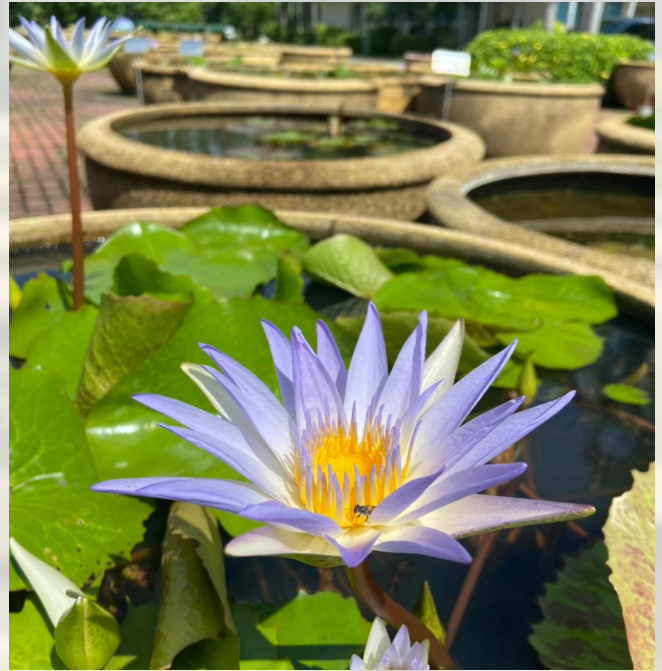


# Life on Land: Conservation and utilization of terrestrial ecosystem

Protect and restore aquatic and terrestrial ecosystem including sustainable forest management.

1. Bua Chalermprakiat Park Kasetsart University Chalermphrakiat Campus, Sakon Nakhon Province  
Bua Chalermprakiat Park is a collection and conservation site for various varieties of lotuses, a place of study for students and the general public, as well as a source of recreation and a new tourist attraction of Sakon Nakhon province divided into 3 parts as follows:

1. Lotus collection, there are a total of 34 species.
2. The lotus variety show, which brings 74 varieties of lotus to the show.
3. The exhibition section is displayed on the ground floor of the R&D building, which is an exhibition of knowledge and the history of various lotus varieties.



## 2. Nonghan Chalermprakiat Park

It is a local and northeastern aquatic plant park that collects plants as a place to study, experiment, research aquatic resources, and water management, providing continuous and sustainable training and dissemination of academic knowledge for the general public, including public, private, local, national, and international officials.



### 3. Good quality economic seedlings for trade

The Trat Agricultural Forest Research and Training Station, Faculty of Forestry, Kasetsart University has a forest area of over 611 rai with at least 200 species of plants surveyed in the area, many of which are important economic plants that have the potential to be used to produce seedlings for sale to generate income for the agency, and can produce at least 10,000 seedlings per year for use in activities such as selling income to the station, distributing them to farmers in the area to support the cultivation of agricultural crops. It is used to support community reforestation work and support research.

FORESTRY FOR ALL: วนศาสตร์เสริมอาชีพ ช่วยเยาวชนได้รับผลกระทบ COVID-19

**โครงการ “ปันกล้าเพื่อสังคม”**

**คณะวนศาสตร์** โดยสถานีวิจัยและนิทรรศการ วนศาสตร์ ได้ผลิต “กล้าไม้คุณภาพดี” หลากหลายชนิด เช่น เตยแดงทอง ยางนา พะยูง หลุมพอ มะค่าโมง แดง พะยอม ประดู่ป่า ฯลฯ ไว้เพื่อปลูกทดลง ปลูกฟื้นฟูในพื้นที่ สนับสนุน กิจกรรมสาธารณะ และจำหน่ายเป็นรายได้

**เรา** เตรียมแบ่งปันกล้าไม้แจกจ่ายให้ประชาชนที่ได้รับผลกระทบจาก **โควิด-19** นำไปปลูกในพื้นที่ตนเอง เพื่อจะ สร้างรายได้ที่มั่นคงในอนาคตด้วย **ไม้เศรษฐกิจ**

**สนใจรายละเอียดติดต่อ**

- สถานีวิจัยและนิทรรศการวนศาสตร์วังน้ำเขียว จ.นครราชสีมา โทร. 081-8763023
- สถานีวิจัยและฝึกอบรมวนเกษตรตราด จ.ตราด โทร. 091-4085556
- สถานีวิจัยและนิทรรศการวนศาสตร์หาดวนกร จ.ประจวบคีรีขันธ์ โทร. 085-1518798
- สถานีวิจัยวนศาสตร์พังงา จ.พังงา โทร. 087-8679061

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ขอสงวนสิทธิ์เฉพาะผู้ได้รับผลกระทบจากโควิด-19 เท่านั้น  
เนื่องจากกล้าไม้มีจำนวนจำกัด

สอบถามรายละเอียดเพิ่มเติม ได้ที่ ศูนย์ประสานงานสถานีวิจัยและป่าสาธิต คณะวนศาสตร์ มก. โทร. 0935780684

### 4. Flowers from banana cladding

Kamphaeng Saen area has a lot of banana trees. Therefore, the idea of processing banana trees for good and developing them into artificial flowers from banana cladding by inventing flowers, arranging bouquets and wreaths, and various forms of flowers.



### 5. Coconut conservation plot

Kasetsart University Kamphaengsaen Campus has a coconut conservation plot, which collects coconut varieties in all areas of Thailand, which has about 200 varieties in an area of over 30 rai. The objective is to be a coconut breeding showroom and a learning center, an information center and coordination of distribution points in various areas for farmers, so that farmers can purchase coconut varieties that are suitable for each region's cultivated areas and can effectively meet the needs of farmers. In this coconut conservation plot, locals can come and grow vegetables in the kitchen garden for consumption or sale as an additional income. It also benefits from having the locals take care of the plot to always have a good view, and not become desolate.



## 6. Thap Kwang Station, Department of Animal Husbandry, Faculty of Agriculture, Kasetsart University

Thap Kwang Station is a research and development agency for knowledge on pig production, technology transfer of pigs and other livestock to develop farmers' capacities, provide animal breeding services, related information services, provide training, support teaching, internships, veterinary skills training, and promote arts and culture.



“ทับควางไม่ไกล ไ่ว้หมดโควิดเมื่อไหร่ เราจะได้พบกัน”

## 7. The International Buffalo Information Center (IBIC)

It is operated by the Kasetsart University Library under the support of the International Research Development Center (IDRC) and the Food and Agriculture Organization of the United Nations (FAO). It collects Buffalo information from various sources around the world to create databases, create digital documents, and provide systematic services, as well as as a medium of exchange and distribution of information between Buffalo information users, both domestically and internationally.

คำ Impact Factor ประจำปี ค.ศ. 2021  
ของวารสาร Buffalo Bulletin เท่ากับ

Impact Factor  
**0.2**

วารสาร Buffalo Bulletin เป็นวารสารวิชาการด้านกระบือจัดทำโดย  
ศูนย์สมทบการบริการนานาชาติ สำนักหอสมุด มหาวิทยาลัยเกษตรศาสตร์  
ทั้งนี้วารสารได้ขออณุญาตเผยแพร่ข้อมูลในวารสารนี้ และ 1 ใน 8 วารสารในเครือ  
ภายใต้ Impact Factor จากฐานข้อมูล Web of Science

สามารถดูบทความตีพิมพ์ออนไลน์ (ไม่มีค่าใช้จ่าย)  
ได้ที่ <https://kuojs.lib.ku.ac.th/index.php/BuIBu>







## Ensure sustainable consumption and production patterns.

Promote peaceful and inclusive society, develop institution to have effectiveness with accountability and transparency.

1. Kasetsart University consolidates its will to declare its intention 'Integrity, fairness, transparency, anti-cheating of all forms' 1.1 Kasetsart University has established an administrative policy to promote the integrity and transparency of Kasetsart University administrators. It consists of 6 areas of policy as follows: 1. Transparency policy 2. Liability readiness policy 3. Corruption-free policy in performance 4. Moral culture policy in the organization 5. Morality policy in the agency 6. Communication policy within the agency so that all personnel are informed of Kasetsart University's operations and develop the department to have integrity and transparency in accordance with the guidelines for assessing the integrity and transparency in the operations of government agencies.



### 2. The Wednesday Hansa

It is a walk-and-run activity to raise awareness of health, encourage students and staff to participate in corporate activities, and create effective, open institutions at all levels. Students and staff will participate in the event every Wednesday from 5-6 p.m. at Insi Chantharasathit Field on a weekly basis and use the application to confirm the distance. Upon completion of the project, a commemorative shirt will also be presented to the participants.

The Division of Student Affairs, Kasetsart University organizes activities from a group of students who gather to invite university administrators to exchange, conduct brainstorming workshops, suggest problems, listen to non-ceremonial, undivided status, and everyone who participates in the activity will walk equally around the university, jointly develop the institution to be effective and change the university for the better.







# Partnerships to achieve the Goal: Collaboration for sustainable development

Build collaboration among public sector, private sector, and civil society including international collaboration to achieve sustainable development.

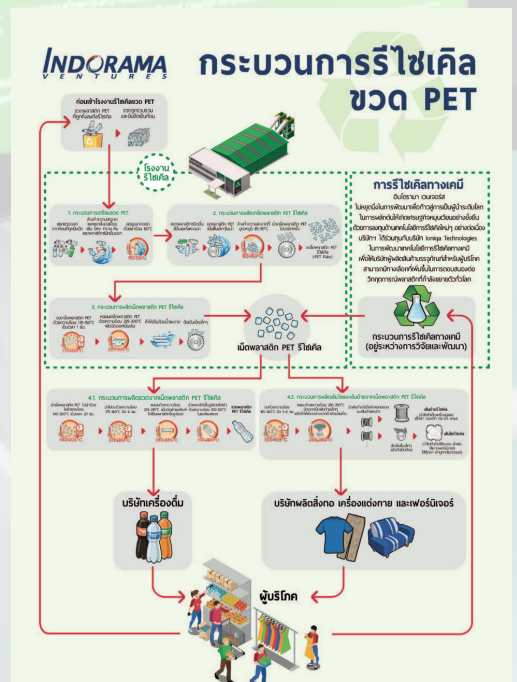


## 1. KU & HUAWEI digital transformation for society

Kasetsart University has signed an MOU between KU and Huawei (Thailand) to jointly develop 5G and digital in agriculture, smart university, factory and health care. Kasetsart University has embarked on a variety of dimensions and has demonstrated its research and utilization in areas such as knowledge, competence, 5G and digital. HUAWEI has been involved in the development and support of smart learning, smart university, and smart agriculture at Kasetsart University. It also discussed developmental approaches to AR VR MR to promote agripreneur and market place in the KUUniverse project to work more efficiently.



2. IVL joins hands with Kasetsart University Raising awareness about waste sorting and recycling waste management Indorama Ventures Public Company Limited, a leading global sustainable chemicals company, collaborates with Kasetsart University to raise awareness of waste sorting, jointly develop waste sorting and recycling materials, innovate, and raise awareness of waste and plastics sorting by combining recycling knowledge with academic knowledge in developing projects related to waste capture from drainage, supporting waste sorting bins, and training university agencies on waste sorting and recycling to promote accurate waste management, especially during the COVID-19 pandemic. It must be stored with care to ensure good hygiene. In addition, recyclable plastics like PET bottles can also supplement revenue and create economic added value.'





### 3. Kasetsart University joins hands with Taita to partner with agricultural drone training partners for the future

Faculty of Agriculture Kasetsart University The Thai Agricultural Innovation Trade Association (TAITA), in collaboration with network partners, Department of Agriculture, Department of Rice, Naval Air Force Naval Academy Nawaminthaksattiyathiraj, Waruna (Thailand) Co., Ltd., ATI Technologies Co., Ltd., and ICPX Co., Ltd., jointly organized the 'Drone for Tomorrow' training to create drone learning, know the rules, exchange of drone experiences for agriculture to youth and communities to incentivize the development of drones for the future, which is an effective technology, has high agricultural accuracy, reduces labor consumption, reduces water consumption, greatly improves Thai economic value, and reduces environmental impact.



### 4. Kasetsart University signs MOU with 4 sectors of Pattaya Floating Market Community Enterprises to build community professions in the area

Kasetsart University signed a Memorandum of Understanding (MOU) with 4 sectors of Floating Market Community Enterprises pattaya (Monkrachai) to develop agricultural technology education and innovation to be a learning center for agricultural crop production, as well as to educate villagers and communities surrounding the area in modern farming for greater efficiency and effectiveness. It can create careers for the community, create stability and prosperity and sustainability in agricultural careers for the community.

With the cooperation of 4 sectors of floating market community enterprises, Pattaya (Monkrachai) will result in a better quality of life for the surrounding communities.





5. Kasetsart University co-signed an MOU to consider research ethics in co-institutional people. Associate Professor Sutkhet Nakhasathian, Vice-Chancellor for Research and Creativity, Kasetsart University, signed a Memorandum of Understanding (MOU) to consider research ethics in co-institutional people between party institutions and national research agencies on September 7, 2022, at the Miracle Grand Convention Hotel, Bangkok, to promote and develop standards of research ethics in person to international standards in order to enable clinical research or research in people related to multiple institutions to be carried out quickly and in accordance with Good Clinical Practice, a total of 46 participating institutions signed on. This collaboration will promote and develop ethical standards for human research to international standards in the future.





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