Maejo University SDG Report 2020

MJU SDGs

SUSTAINABLE UNIVERSITY FOR SUSTAINABLE DEVELOPMENT GOALS 2020

Contents

President's Message

Key role of Maejo University during the crisis of COVID-19 pandemic in the previous two years up to the present is to cope up with various problems disrupting university development. Nevertheless, this dramatic crisis makes us unite to make a dream come true and overcome these obstacles. One achievement which we are proud of Maejo University is the result of the world university ranking by Times Higher Education Impact Ranking of the year 2021. This is on the basis of roles of the university under Sustainable Development Goals: SDGs, and Maejo University is ranked in the range 301-400 in the world (Ranked fifth of the country). Notably, Maejo University ranks 39th in the world in terms of the contribution to push forward hunger-poverty alleviation, food security, and nutrition of people of all ages. On behalf of the President of Maejo University, I am genuinely grateful to all university executives, personnel, students, and alumni for the glorious success of the country's excellence in agriculture university. Indeed, this success is our beginning of mutual development in many aspects, although limitations still exist, and I do hope that Maejo University will be worldwide recognized in the near future.

Thank you.
Associate Professor Weerapon Thongma
Maejo University President

No 39th
Sustainable Ranking Impact*

Time Higher Education Impact Rankings 2021

1 NO POVERTY

End poverty in all its forms everywhere

Maejo university offers scholarships to students from low income families. The university always promotes and supports the educational funds for impoverished students. There were 4,989 students (34.60% of all students) receiving this financial aid. Student Loan Fund or Income Contingent Loan: ICL was given to needy students 183,677,300 baht (6,122,576$). Other 491 scholarships were provided at a price of 10,784,400 baht (359,480$). In summary, Maejo University allocated educational funds worth 194,461,700 baht (6,482,056$) in total during this academic year. In addition, Maejo University also run many projects to relieve our students from hunger.

15.4% Research
194,461,700 baht (6,482,056$) Financial Aid
491 Scholarships
24 Anti-poverty Programs

Growing Vegetables to Earn Tuition Fees (Fishery)

The project of growing vegetables to earn tuition fees, by the Faculty of Fisheries Technology and Aquatic Resources, aimed to practice the fishery students. In the beginning, students learned to farm the catfish, ornamental fish, red algae, and giant fresh water prawn. Next, students were trained about the processing and selling in MAEJO market 1934 and Fresh market which run by Business Administration Faculty. 48 students joined in the project. In the academic year of 2019, the faculty granted the scholarship to 18 students who participated in this project 333 USD/each (10,000 baht/each).The income from the project was about 2,419 USD (72,590 baht).

1 NO POVERTY

Chang Hua Man Royal Project

His Majesty the King Bhumibol Adulyadej graciously donated his own treasury to buy land about 250 rai at Bahn Noong Ko Gai, Khao Krapook Sub-District , Tha Yang District , Petchaburi. The Chang Hua Man Royal Project was developed to be the center of economical crops. It purposed to develop and support the agricultural careers for their ability and success in sustainable livelihood of themselves and their families. Maejo University had involved in supporting the Chang Hua Man Royal Project, since October 2013 – September 2020 and will continue the operation in 2021. Within an area of 10.5 rai, a model project was established to demonstrate agricultural plots both monoculture and integrated farming in order to allow farmers, students, and people to acquire the sustainable agriculture practices that they could bring their knowledge and experience from this Royal Project model to apply in their households and communities. The Royal Project has been recognized as successful in contributing to the sustainable social, economic, and environmental security. From October 2013 – September 2020 Chang Hua Man Royal Project had earned 3,135,061.43 baht from selling products from elaborate agriculture demonstration plots offered by Maejo University. More information: : www.royal.mju.ac.th

Short-term Compost Production by using Microbial Activators, Nong Tong sub-district, Hang Dong District, Chiang Mai Province

National Science and Technology Development Agency (NSTDA) and Faculty of Science, Maejo University reached an agreement to solve the problem that was the agriculturist lacking the knowledge of compost.

The main goals of this project were 1) to train the farmers on how to produce the compost by using Microbial Activators and apply in their careers to increase both product quantity and income 2) to make core-team farmers of Good Agricultural Practices (GAP) for Longans. Asst.Prof.Dr. Tapana Cheunbarn was a speaker of technology transfer which was a body of knowledge from his research for community. There were 50 farmers participated in this training program.

As a result, the farmers earned the annual net income 2,121,500USD (63,645,000 baht/year) from three sources as follows: 1. Compost distribution 8,833USD (265,000 baht/year) 2. GAP Longan distribution 2,002,667USD (60,080,000 baht/year) 3. Local Vegetable (which were grown in compost producing by Microbial Activators) distribution such as cauliflower, cantonese lettuce, zucchini, cow pea, cucumber, and acacia 110,000USD (3,300,000 baht/year).

For more information:

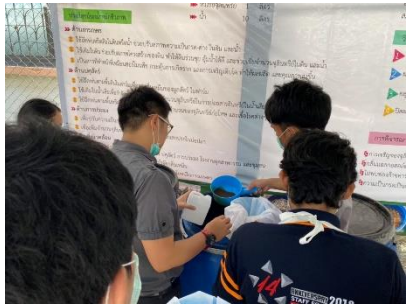
http://www.erp.mju.ac.th/openFile.aspx?id=NDIxMzI4&method=inline

Memorandum of Understanding

Faculty of Science, Maejo University has signed a memorandum with Biotechnology Industry (Thailand) affiliated to Organic Way Corporation Company Limited to research and develop products as well as to provide agricultural production factors and enhance practical skills to the students of Faculty of Science.

Transfer of process in reducing production cost for swine raising to create sustainable career in community based on Sufficiency Economy Philosophy through community participation in upper Northern area

Transfer of process in reducing production cost of swine raising to create sustainable career in community based on participation of community in upper Northern area is an innovation for farmers in managing odor in swine farm as well as purify bio gas. The reuse of waste leads to cost reduction but more on production. This project has applied Sufficiency Economy Philosophy bestowed by His Majesty the King in order to empower farmers into better self-protection and successful farming careers in the future. Research knowledge of faculty members, Faculty of Science, Maejo University as well as scientific technology was transferred to community to solve community problems. These included wastewater treatment of swine farm and application of effective microorganisms for reducing ammonia odor in swine farm. A training course was set for swine raisers. 53 swine raisers from 2 villages of Chae Hom District, Lampang Province and 33 swine raisers from 1 village of Wang Nue District, Lampang Province participated in the training. They learned how to apply microorganisms in wastewater treatment and how to reduce odor nuisance from swine farm. Biogas produced from swine wastewater treatment process can be used to generate electricity for farm and household. Moreover, a learning station was established through people participation to provided knowledge about the application of microorganism in wastewater treatment and odor elimination. The results of the training showed that the target group was self-sufficient. They were able to apply research knowledge for developing their swine production. This could reduce wastewater treatment cost, increase income and reduce pollution as well.



Zero Waste Management for growing vegetables to earn tuition fees project

Zero waste management is a concept that adheres to the principle that "waste has economic value. Its goal is "minimizing waste and eliminating residuals using efficient technology", where the main principle is to recycle or create products out of them. This process can help raise economic goals and create jobs for society, communities, even students within Maejo University. Growing vegetable project for tuition fees of Maejo University was a strategic project that encourages students to apply knowledge from theory to practice. In agricultural production, there will be wastes that occur in each process, such as vegetables and fruits that have been damaged over time or crops of poor quality. All of these are recyclable wastes that can be re-processed and made new products. Students are able to participate in every step of the process from waste management, processing to creating new products. Therefore, the Faculty of Science has an idea to implement the Zero Waste Project, the Zero Waste project for the vegetable growing project for tuition fees. Maejo University uses the biological wastes that occur in each activity or step in the vegetable growing project and processed it into bio-fermented water. Program Objectives - To reduce the amount of biological waste arising from activities or procedures in Growing Vegetables for tuition fee. - To convert biological waste into bio-compost that allows students of the Faculty of Science to participate in each step of the production process - To promote the Faculty of Science students to learn both theory and practice for the best utilization of biological waste as well as developing the production process until it can become a business For More information: https://drive.google.com/file/d/1CZ0_31Wop3fry3Gw10nM12ihrUlANeKX/view?usp=sharing Page facebook: - คณะวิทยาศาสตร์ มหาวิทยาลัยแม่โจ้ - สโมสรนักศึกษาคณะวิทยาศาสตร์ มหาวิทยาลัยแม่โจ้ - กาดแม่โจ้ 2477 Impact: Students of Science Faculty, the community, the farmers

Non-reversible Organic Fertilizer Learning Base Project

The project opened to government agencies, private sectors, farmers, students and interested people to visit the learning base throughout the fiscal year 2020. The project organized training on "Production of quality organic fertilizers without inverting the pile from agricultural waste" on August 16, 2020 at Huay Sai Sub-district, San Kamphaeng District, Chiang Mai Province. And on September 10, 2020 at Mae Faek Subdistrict, San Sai District, Chiang Mai Province. There were 100 trainees in total. The learning base has increased academic service channels and created a network of interested people across the country. The project was implemented since September 2013 through an online channel, Facebook, fan page. The registered page was "Non-flipping compost classrooms Maejo", an academic service through online world channels. It was found to receive a good response from those interested in agriculture. There were as many as 129,130 ??likes and 133,113 followers (August 2020). Topics that have been described in Facebook fan pages are in 4 types: 1. Inverted organic fertilization in a basin 2 Organic fertilizer without turning in baskets 3. Production of organic fertilizers in small, rectangular, non-reversible heaps. 4. Production of organic fertilizers in large, triangle, non-reversible heaps. By inviting those who are interested to do organic fertilizers in various ways, this allowed other members to be inspired and knowledgeable. From following up on answering questions, consultation and providing suggestions for solving problems, with the average submission of various organic fertilizers per month as followed. Inverted organic fertilizers produced through online technical service channels were at least 30 tons per month, worth 4,950 USD (150,000 baht). Some of them are producing organic fertilizers for commercial distribution that are registered as an organic fertilizer producer. Some are used to increase agricultural production including the production of organic rice and vegetables. Other online channel on Facebook fan pages was "Knowledge Exchange of Composting, Maejo Engineering ". It received a good response from those interested in agriculture with 140,000 likes (August 2020). The project organized a training on "Production of quality organic fertilizers without inverting the pile from agricultural waste" on August 16, 2020 at Huay Sai Sub-district, San Kamphaeng District Chiang Mai Province and on September 10, 2020 at Mae Faek Subdistrict, San Sai District, Chiang Mai Province. There were over 100 trainees. The activities in the morning were lectures. And in the afternoon, it was a demonstration of composting method. There were 5 visits to work and learning on organic fertilizer production, with 137 participants. In addition to training and learning base visits, the learning base has also produced 10,000 kilograms of organic fertilizers as samples for those interested in and would like to see the authentic production. Participants would also learn how to manage it from the beginning of the production process until the last step. They could apply for further used and generate income or add value to the waste materials in the community. For more information: https://erp.mju.ac.th/projectAssessFrm.aspx?goID=27&pid=15700

Alumni Participation

Maejo University Chumporn Campus was supported the "Bamboo for Brotherhood" project from Maejo-Southern Alumni Club. The bamboo was growing in the first plot on August 8th, 2019. The objectives were 1) to be the learning center and gather national bamboo species 2) to be the income source for Maejo University Chumporn Campus 3) to be the Academic Service providing knowledge about the bamboo to the community 4) to develop to be Agritourism and 5) to be the channel for MAEJO alumni to give back to soceity. Currently, D.sericeus and Bambusa beecheyama were growing over 2 rai and giving 400 bamboo seedling to plant for this project. However, we conducted the seminar and provided the Academic Service about bamboo gardening and breeding successively on July 25th, 2020 and so forth

Safe Tofu Production by Reducing the Chemical Usage

The Academic Service held a training program, "Safe Tofu Production by Reducing the Chemical Usage", at multi-purpose hall, Saluang Sub-District, Mae Rim District, Chiang Mai Provinc. There were 50 persons participating in the project and most of them were farmers and interested housekeepers. The participants gained the knowledge about soybean in 3 topics as follows: the benefits of tofu, the types of tofu, and safe tofu production process. The participants also watched a step-by-step guide to safe tofu production process. Finally, the participants took part in a workshop on "Safe Tofu Production" and consulted the speaker about the equipment store or other raw materials like green bean and red bean to make tofu. For more information: https://erp.mju.ac.th/projectAssessFrm.aspx?goID=27&pid=15701

Pid Thong Lang Phra Royal Project, Ban Pang Area

Pid Thong Lang Phra under the Royal Initiative was a development project operated in line with His Majesty's Royal Initiatives to transfer know-how from the many Royal Initiative Projects aimed at creating better and sustainable living for people as well as motivating consciousness in natural resources, environment and Thai art and culture conservation. Pid Thong Lang Phra Royal Project at Ban Pang was the coordination project between Maejo University and relevant government agencies in Chiang Mai. The project was supported budget since 2014 to transfer technology utilization in organic vegetable production system. Farmers were trained how to produce organic fertilizer, herbal insecticide and White muscardine which were easily found in local community. Moreover, the project provided technical knowledge about using agricultural waste as natural factors of production to participating farmers. This could reduce the cost of agriculture production as it was a symbiotic interaction which was necessary for soil improvement without applying chemical substance or antibiotic. There were many activities operated under Pid Thong Lang Phra Project such as Lingzhi mushroom cultivation and management training for farmers, the training on Indigenous Chicken and Black bone Chicken Raising in sufficiency economy model, farmer training on Hydroponic farming, etc. 510 farmers in Ban Pang and other clients participated in the trainings.

The Processing of Health Products from Organic Vegetables and Fruits

The Academic Service held a training program, "The Processing of Health Products from Organic Vegetables and Fruits", on June 1st, 2020 at Faculty of Engineering and Agro-industry, Maejo University, SunSai District, Chiang Mai Provinc. There were 50 persons participating in the project and most of them were housekeeper group living aroun the university. The participants gained the knowledge about yam processing from organic vegetables and fruits. All participants could ask about sanitarian production method, safety of machinery or equipment, cost of production, and production equipment store. Lastly, the participants took part in a workshop on "Yam Processing of Health Products from Organic Vegetables and Fruits" . For more information: https://erp.mju.ac.th/projectAssessFrm.aspx?goID=27&pid=15702

Employment of People in Areas Affected by COVID-19 Pandemic Project

Detail: This project was aimed to employ people who were coping with job loss caused by the coronavirus disease 2019 (COVID-19) pandemic. 455 people were employed in employment phase 1 and phase 2. They were empowered by developing various work skills such as community analyzing and problem-solving, social innovation developing, conducting a survey and managing data, mapping community forests, developing innovative food. The project results showed that those employed in this project were responsible for area surveying, documenting community information, clarifying details, as well transferring, contributing and collecting related and necessary information, including problems and obstacles to support the area's operations. The obtained data were analyzed and determined the operational plan together with the project advisor and community leaders. The body of knowledge and technology was reported in the form of information to promote and support main community problem-solving.

Project Supporting Royal Project Foundation

According to the strategic plan of Maejo University, the Office of Agricultural Research and Extension has supported projects initiated by His Majesty the Late King Bhumibol. Royal Project Foundation is a project that Maejo University took part in supporting since 1969 when His Majesty King Bhumibol Adulyadej set up the first royal project after he learned about the problem of opium cultivation. Hill tribes' major source of income was from growing opium. They traditionally used slash-and-burn agriculture to farm their forested land and tended to migrate whenever they felt that the soil at their present location was becoming depleted. Moreover, there was a national insecurity problem in border areas. At the first phase of setting royal project, Maejo University had supported personal in surveying and evaluating the establishment of other royal project development centers in different areas. Soon after that the university annually provided budget supports to 5 royal project development center that included 1) Mok Cham Royal Project Development Center, Tha Ton Sub-district, Mae Ai District, Chiang Mai, 2) Sa-Ngo Royal Project Development Center, Si Don Mun Sub-district, Chiang Saen District, Chiang Rai , 3) Tung Luang Royal Project Development Center, Mae Win Sub-district, Mae Wang District, Chiang Mai, 4) Mae Sa Mai Royal Project Development Center, Pong Yang Sub-District, Mae Rim District, Chiang Mai, 5) Mae Poon Luang Royal Project Development Center, Mae Wean Sub-District, Prao District, Chiang Mai. Maejo University established demonstration plots and promoted winter crops growing to the hill tribes. Moreover, growing herbs and raising highland cattle were introduced in order that hill tribe farmers inhabited in the responsible areas could have career stability as well as income stability. As a result, the hill tribe farmers stopped cutting trees, eliminated opium poppy, and ended slash-and-burn farming practices. They turned to grow a wide variety of cash crop instead. The development and occupation promotion policy of royal project foundation aimed to improve the quality of life of the hill tribe farmers. The objectives were as follow: 1) to enhance communities under the areas of royal project development center toward the knowledge-based communities which corresponded to the environment of highland communities, 2) to develop further knowledge that was suitable for introducing plant and animal species for sustainable occupation promotion to highland people, 3) to develop royal project development centers to be learning centers for growing a variety of plants and raising a variety of animals at highland areas. Farmers as well as ordinary people could apply knowledge to practice in their career, 4) to provide the direction for the development of hill tribes inhabited in the areas of royal project development center to be self-reliant and able to improve their quality of life. There were 1,900 target groups and clients that included farmers in the areas of 5 royal project development centers. Operation results, outcomes of supporting 5 project foundations, the support in demonstration plots establishment and occupation promotion for hill tribe farmers in planting winter crops, temperate flowers, herbs as well as raising highland animals in order to create occupation and income for hill tribe farmers. The career development and product support plans were expanded to other areas to encourage people to participate in the developing activities continuously. The income from agricultural products selling through marketing system of royal project foundation included : 1. Sa-Ngo Royal Project Development Center 1) vegetables 2,894,375.50 baht, 2) fruits 486,336.40 baht, 3) flowers 146,200.00 baht, 4) herbs 4,900,630.00 baht. 8,427,541.90 baht in total. 2. Mae Poon Luang Royal Project Development Center. 1) vegetables 19,730,670.06 baht, 2) fruits 2,003,347.00 baht, 3) Chinese tea 568,580.00 baht, 4) coffee 3,494,909.00 baht 25,797,506.06 in total. 3. Tung Luang Royal Project Development Center. 1) vegetables 52,710,108.00 baht, 2) flowers 666,512.95 baht, 3) fruits 6,518,332.00 baht, 4) cattle 214,440.00 baht. 60,109,392.95 in total. 4. Mae Sa Mai Royal Project Development Center. 1) vegetables 6,939,851.14 baht, 2) fruits 6,462,066.24 baht. 13,401,917.38 in total. 5. Mok Cham Royal Project Development Center. 1) vegetables 15,845,879.00 baht, 2) fruits 3,847,250.00 baht, 3) field crop 2,476,435.00 baht, 4) mushroom 138,190.00 baht. 22,307,754.00 in total. More information: www.royal.mju.ac.th

Academic Support, Follow-Up, and Lesson Learning from an Experimental System of Labor Skill Development in Needy and Disadvantaged Communities Based on Funding from the Equitable Education Fund Project

The School of Administrative Studies under the leading of Dr. Somkid Kaewthip has implemented a project entitled, “Academic Support, Follow-Up, and Lesson Learning from an Experimental System of Labor Skill Development in Needy and Disadvantaged Communities Based on Funding from the Equitable Education Fund” in the fiscal years of 2019 and 2020. Currently, in Thai society, the working-age population often suffers from unemployment due to the economic downturn causing these groups of workers to be laid off and move back to their homeland a lot. In addition, workers who are still employed in workplaces are considered as unskilled or low skilled workers due to a lack of skill development to be consistent with and link the economy, community, and labor market. Besides, there was a problem of educational disparity, resulting in the working-age population with Lower Secondary Education qualifications or lower have lower incomes than those with a degree or higher. As a result, there are many disparities in various areas such as income inequality, employment, and professional skill development. The objectives of this project are 1) to reinforce, design, and create a participatory learning process for the professional development unit, 2) to support and develop mechanisms for driving the career development unit to have the potential for learning management, 3) to manage knowledge in labor skill development of the development unit career, 4) to create a network of professional development units to drive collaborative learning, and 5) to synthesize lessons and develop policy recommendations for the development of labor skills for occupational development units and labor groups who are poor and disadvantaged. The project has been undertaken cooperatively with the various networks nationwide in recruiting participants through EEF (Equitable Education Fund). At present, there are many related projects under the care of Maejo University from every region. There are 74 career development units covering 5 regions, namely the North, the Central, the West, the North-East, and the South, including 42 provinces nationwide. The participants receive funding to return to their homeland for creating job opportunities and building communities by helping the needy and disadvantaged. They are expected to develop skills, knowledge, and ability to work according to their aptitude and the potential to be self-reliant ultimately.

In addition, they are hoped to be able to survive, coexist, and live meaningfully in their community and society through the development of life skills in household economics, management skills for the 21st century, career networking, occupational and entrepreneurial skills, career skills along the path, community-based career advancement, etc. The project has a mechanism to follow-up and to provide support from mentors from all four regions right from the upstream, midstream, and downstream processes to make the career development units achieve successful implementation of the project, and to achieve the goals of EEF. There were 6,055 needy and disadvantaged persons participating in the project and they could be divided into 2,175 system workers, 1,236 unemployed, 601 elderly persons, 622 imprisoners, 254 disabled persons, 284 state welfare cardholders, and 883 persons in other categories (like youth parents/youths/housewives/community enterprises). It was found that the project could develop occupations for the persons in the shortage and disadvantaged groups in 6 independent careers, namely: agriculture, processing, handicrafts and crafts, handicraft, entrepreneurs, and hospitality and tourism. As a result, it was found that there were significant impacts on the target groups and local communities. There were career development curricula that matched the target group's needs, there were products developed from resources available in local communities, community economic development, products derived from local wisdom by combining 21st-century knowledge for product design. The packaging was unique and created a reputation for each area in every region of Thailand. The project created entrepreneurial career development established a network of entrepreneurs, created platforms, marketing, and target products. It could make the participants reduce their expenses, increase income, able to support themselves and their families, and their life valuable and happy. Moreover, the project could stem out outstanding career development units all over the country to extend the main project under the 2020 community-based innovation and career development funds. At present, there were 19 projects, covering 4 regions for such a main purpose and they had been evaluated and monitored by mentors and experts in various fields from 4 sectors (government/academia, private, mass media, and community expert sectors). The project had been considered and approved for funding for 2020. To sum up, the project can be considered as an extension of the operations to enhance the development of professional skills, to expand the area and scope of work of the professional development units, to create jobs, create careers, strengthen the community economy, to reduce disparity, and to enhance the quality of life of the people in the community to be happy based on community-based career development. For more information, you can follow the development of the project at https://www.facebook.com/community.base.eef

Econ Zero Waste Project

Econ Zero Waste Project by Economics Faculty has been started since the fiscal year 2019. The beginning point was from taking part in Green Office Assessment Project which has been performed since 2015 by National Committee, Department of Environmental Quality Promotion (DEQP). As a result of winning G-Golden Award for Green Office 2015, Faculty of Economics has still continued this project up till now to prepare for an assessment in 2021. In fiscal year 2020, the faculty established Econ Zero Waste Project ll to prepare for above assignment successively. The objectives of this project are to 1) promote students and staff in Maejo University to the importance of recycle. The faculty analyzes data on the amount of waste generating the greenhouse gases. 2) enhance participation in waste separation and raise student awareness on environmental conservation. For example, the reduction of plastic use is to lessen environmental problems sustainably. The activities regarding this project are as follows: Econ Green Camp (educating how to manage waste to students), Sorting Waste out for Happiness (garbage or leftovers donation like glass or plastic bottles), Econ Zero Plastic ("Plastic Use Reduction" photo contest), Plastic Straw Donation (making pillow), collect data on the amount of waste, and survey the readiness in waste separation activities. More information: https://www.facebook.com/econzerowaste

Watershed forest conservation and restoration project, effective management of water system throughout agricultural area, sustainable prevention and solution of haze pollution in the Northern region. (Natural resource and environment management project)

Maejo University is strategized to be a green university, so the university emphasized in developing biogas energy especially from maize straw in the Northern region. Maize straw was utilized as fuel for generating electricity through applying suitable technology such as Organic Rankine Cycle technology which converted low-temperature heat into electricity. Biomass was boiled at 90-110 C, then the heat converted into electric energy. Since this technology worked in a closed system, therefore it was safe and environmentally friendly. The project was operated by integrating all sectors in the area (government sector, private sector, and community) in solving haze pollution in the Northern region. The use of waste to produce 300 KW of electricity was introduced and demonstrated to the community. People participated by gathering agricultural waste and selling their waste to the project. Maejo University allotted its site for installing an electricity generation system. Community people were demonstrated how the system worked without environmental impact. The details of operation are as follow:1) the number of times that community people participated in the activities was more than 40 times, 2) the number of communities participated in the project was about 24 communities, 3) there were 25 schools participated in the project, 4) more than 1,300 people obtained knowledge, 5) more than 2,500 students obtained knowledge, 6) there were 13 technologies/ approaches to reduce haze pollution, 7) 1 model area was established in Maejo University, 8) at least 5% of haze in the model area was reduced, 9) more than 10 groups of collaboration / new career groups were created in the community, 10) there was educational scholarship provided for students to reduce the burden of expenses when their parents lack of income during the pandemic situation of COVID-19., 11) there was a collaboration network between community, university, and government agent.

Demonstrating and Promoting Hydroponics at the Households Level and Community Enterprise Project

Hydroponic System is easy, simple, and practical for small space. Every household can grow even in a terrace for consumption or sale. People, agriculturist, and community enterprise should have direct hands-on knowledge, advice, and workshop on hydroponics so that they will consume the fresh, clean, and healthier vegetables. It could be a family activity as well. As a result, they will have healthy bodies and healthy mind connection which is the key to a much happier life. Moreover, It could also increase the household and community income. This project had 535 participants from Chiang Mai, Chiang Rai, Lamphun, and Lampang. Level Overall Satisfactions of the participants were 96%.

Driving Academic Service to Ban Wang Chomphu Community, Saraphi District, Chiang Mai Province

The Faculty of Fisheries has strengthened local fishery communities in Chompoo Sub-district, Saraphi District, Chiang Mai Province. The project aims to promote and develop career in the community by training people to have problem solving skills and have alternative careers. The faculty held a training program, “The Integration of Snakeskin Gourami Fish Farming in Biofloc Technology System with Vegetables Production for Commercial to Develop Food Industrial in Northern Region” by Assistant Professor Dr. Jongkon Phomya as the project leader, on July 12th, 2019 at Muang Jai Organic Farm, Chompoo Sub-district, Muang District, Chiang Mai Province. In addition, the faculty also held a workshop on " Cultivation, Processing, and Organic Certification of Nile Tilapia (Oreochromis niloticus) in the Biofloc Technology System” by Prof. Dr. Nisara Kitticharoen on 16th -17th August 2019 at Muang Jai Organic, Saraphi District, Chiang Mai Province. The results of the project showed that the participants have knowledge on Tilapia fish in the Biofloc technology system, understand the environment-friendly fish farming system, and were able to circulate and manage resources to achieve a suitable ecosystem. They cultivated fish in dense quantities under the effective environmental management, using biological microorganism innovations, reduction in food cost, water consumption, and wastewater from farming systems, and less labor. The yield of 300 fresh tilapia or about 75 kilograms per 4-month production cycle generated income 15,000 baht / year, payback period of 2.5 years. In addition, the Faculty of Fishery is the consultant for the implementation of the Tilapia cultivation in the Biofloc culture system, together with the innovation of Maejo University. The National Innovation Agency (NiA) granted the community to apply this fishery innovation as their business model to create sustainability for the community in the future. The local fishery community group, Chompoo Sub-district, Saraphi District, Chiang Mai Province also received the certification of the Department of Fisheries and IFOAM's aquaculture products production system standards.

Royal Scholarship under Her Royal Highness Princess Maha Chakri Sirindhorn Education Project to the Kingdom of Cambodia

In the Academic Year of 2019, Maejo University offered scholarship for 2 Cambodian students under the Royal Scholarship under Her Royal Highness Princess Maha Chakri Sirindhorn Education Project to the Kingdom of Cambodia.

Training on advertising media design and creation for promoting community products

Training courses on digital media designs to promote product marketing for community. The target groups are community groups who need to develop their product design as well as to enhance their product advertisement. The training courses aim to enable community in developing their products by creating social media for effective marketing.

The program of impoverished student financial aids

In the academic year of 2019, there were 14,420 students attending Maejo University. The university always promotes and supports the educational funds for all impoverished students. There were 4,989 students (34.60% of all students) receiving this financial aid.

Student Loan Fund or Income Contingent Loan: ICL and other funds are opened for all students to apply for. In 2019, it was given to needy students 183,677,300 baht (6,122,576$). Other 491 scholarships were provided at a price of 10,784,400 baht (359,480$).

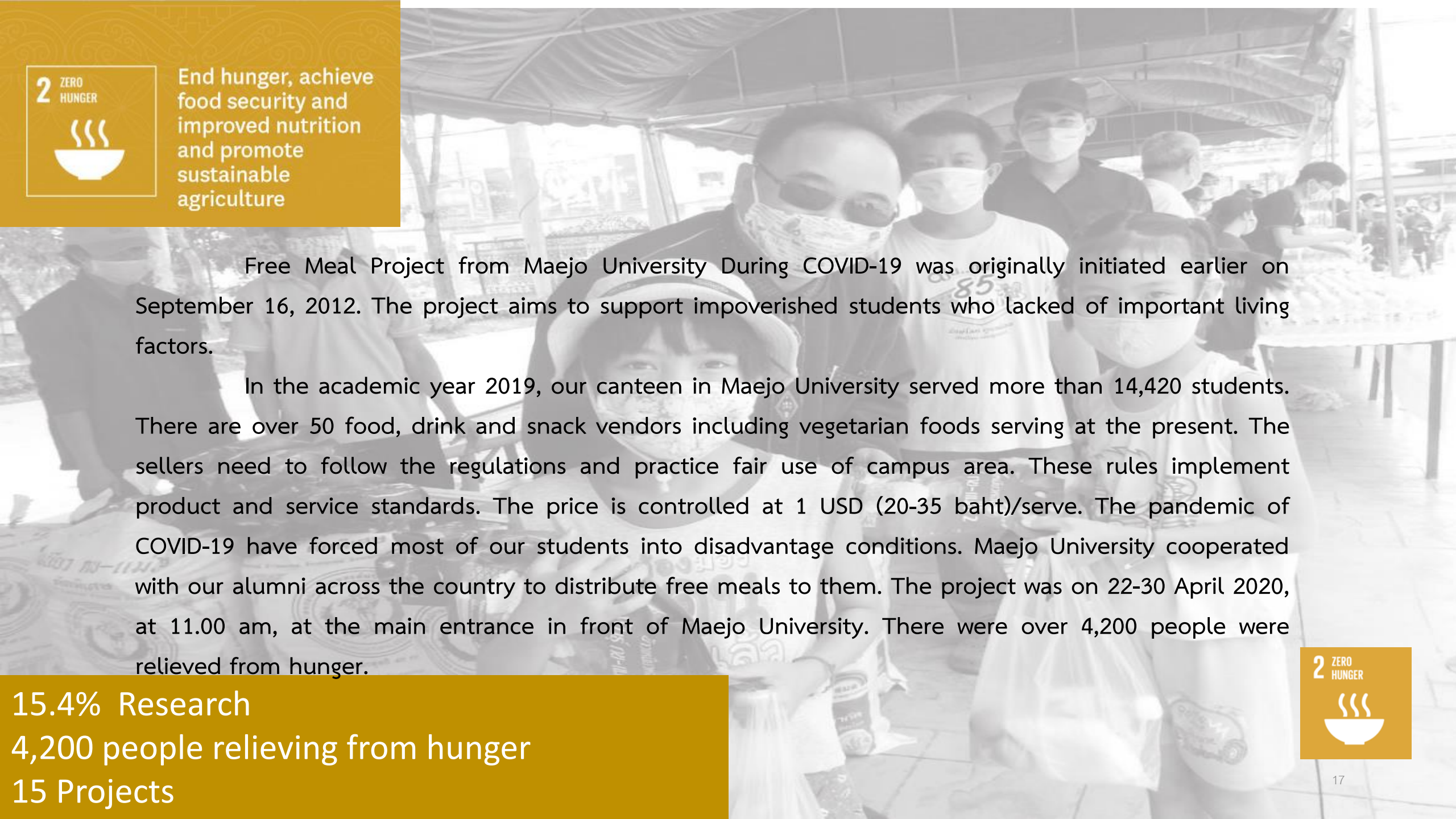
In summary, Maejo University allocated educational funds worth 194,461,700 baht (6,482,056. $) in total during this academic year.

Free-release egg chicken farming activities (aroused chicken)

"Raising Animals for Tuition Fees" had 30 students participated in raising the laying hens in the independent release system. The participated students gained income from selling eggs after deducting all expenses.

MAEJO : HOME TO COUNTRY

The creation of graduate practitioners who are proficient in the profession and keep up with the changes. It is something that must be fused with the integration between academic, professional and life subjects, developing process initiatives. Think systematically Creative thinking Think to decide Action process Teaching And activities for developing student potential to become a lifelong learning society With a commitment to encourage and support students to learn From the way of life of the community And cultivating a sense of responsibility for the community Mae Jo Paeng, a house to build a city It has objectives 1. Integrating study subjects, research, academic services 2. To develop learning based on problems of the area 3. To create graduates who are skilled practitioners and keep up with change 4. The university serves society, SEP for SDGs and Sustainable Education under the two working areas, namely the area of San Sai District Chiang Mai Province. There is an urban building area In the northern eight provinces through the operation with integration Teaching, Research, Academic Services and development of students together with the community. By applying the problems and needs of the community to be a problem in the classroom to develop learning and doing projects with the community. Using research-based principles as a tool to develop answers to each problem. When the results of the research are obtained, a project to solve that problem is created. And extending to other work in building graduates to learn to live with society, to understand the context of Thai society, to help develop the community according to the local context, adaptation for being in a multicultural society Being ready for physical and mental health Being a volunteer to care for the environment Manageability Leadership And lead to occupation, economic, social and environmental impact, students, villagers, farmers, teachers and staff. To understand the situation in the community and the well-being in society Understand self-improvement in the field of study in which they go out to benefit the public. Learning to use community problems as a lesson in producing graduates who are proficient in the profession and keep up with the changes. And career creation can be achieved through learning from real things, raising the level of the community, graduates, professors, university staff and society.



End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Free Meal Project from Maejo University During COVID-19 was originally initiated earlier on September 16, 2012. The project aims to support impoverished students who lacked of important living factors.

In the academic year 2019, our canteen in Maejo University served more than 14,420 students. There are over 50 food, drink and snack vendors including vegetarian foods serving at the present. The sellers need to follow the regulations and practice fair use of campus area. These rules implement product and service standards. The price is controlled at 1 USD (20-35 baht)/serve. The pandemic of COVID-19 have forced most of our students into disadvantage conditions. Maejo University cooperated with our alumni across the country to distribute free meals to them. The project was on 22-30 April 2020, at 11.00 am, at the main entrance in front of Maejo University. There were over 4,200 people were relieved from hunger.

15.4% Research
4,200 people relieving from hunger
15 Projects

Green Office, Faculty of Science

The amount of food waste generated from food within the Faculty of Science between January - October 2020. The amount of 4,216.6 kg.

.

Project on the Conservation of Genetics and Propagation of Syzygium gratum for Sustainable Communities in Chumphon Province

SDGs 2.5 National Hunger Syzygium gratum var. Gratum belongs to the family Myrtaceae. It is an evergreen shrub, special identity with red-brown bark. The tree trunks and beautiful colors are popularly used to decorate the landscape. At present, the Red Samet trees in the forest area have decreased rapidly, so they should be conserved and find ways to increase the number. The objectives are as follows: 1) Conservation of plant genetics due to the Royal Initiative 2) To set up the area for genetic preservation of the Red Samed 3) study the formula of tissue culture food 4) Study of the important substances of Red Samet 5) to prepare documents to disseminate knowledge. Operation methods are as follows: 1) Survey and collect data from Syzygium gratum, such as counting the number of Syzygium gratum. The stem size was measured by diameter and circumference at DBH level. 2) Study of tissue culture food formula 3) Study how to make products containing red Samet. 4) Prepare knowledge dissemination. The results were as follows: 1) The number of Syzygium gratum with a diameter of 5 cm or more were 62 plants with an average diameter of 21.7 cm and a circumference of 55.6 cm. There were two types of growth; M (multiple stem) accounted for 19% and stem type S (single stem) accounted for 81%. There are few trees with very large stems remaining. In addition, the recipe for Syzygium gratum tissue culture, and tea products that contain Syzygium gratum are printed in pamphlets.

Economic Animal Production for Food Security and Safety Project

The Economic Animal Production for Food Security and Safety Project is the application of knowledge from research. It is used to increase the productivity of aquatic animals in safe agriculture leading to dealing with food security problems, improving the nutrition of aquatic animals, farmers access to safe fish production opportunities. This project contributes to the development of sustainable agriculture by: 1. Improvement of 50 pairs of tilapia breeders in the bio-flock farming system. In the well-grown bioflock farming system, 88 families were bred. Knowledge on production and certification of organic tilapia were passed on to 150 students, farmers and interested people on 13-14 August 2020 at the Faculty of Fisheries Technology and Water Resources. In addition, the sustainable organic farming community enterprise, Saraphi District, Chiang Mai, has adopted systems and processes related to the production of organic tilapia species to farmers in the community to produce safe tilapia. This could increase the value of agricultural products and create sustainable income for farmers in the community.

2 ZERO HUNGER

Raising awareness of waste separation and management within the Faculty of Science

Faculty of Science Maejo University organized a learning exchange activity on the topic "Raising awareness on waste separation and management within the Faculty of Science" to enable personnel to understand waste sorting, and as a way to strengthen operations in the Green Office project on Wednesday, July 22, 2020, at Room 3201, Chulabhorn Building Faculty of Science Maejo University.

Zero Waste

Zero waste management is a concept that adheres to the principle that "waste has economic value. Its goal is "minimizing waste and eliminating residuals using efficient technology", where the main principle is to recycle or create products out of them. This process can help raise economic goals and create jobs for society, communities, even students within Maejo University. Growing vegetable project for tuition fees of Maejo University was a strategic project that encourages students to apply knowledge from theory to practice. In agricultural production, there will be wastes that occur in each process, such as vegetables and fruits that have been damaged over time or crops of poor quality. All of these are recyclable wastes that can be re-processed and made new products. Students are able to participate in every step of the process from waste management, processing to creating new products. Therefore, the Faculty of Science has an idea to implement the Zero Waste Project, the Zero Waste project for the vegetable growing project for tuition fees. Maejo University uses the biological wastes that occur in each activity or step in the vegetable growing project and processed it into bio-fermented water. Program Objectives - To reduce the amount of biological waste arising from activities or procedures in Growing Vegetables for tuition fee. - To convert biological waste into bio-compost that allows students of the Faculty of Science to participate in each step of the production process - To promote the Faculty of Science students to learn both theory and practice for the best utilization of biological waste as well as developing the production process until it can become a business https://drive.google.com/file/d/1CZ0_31Wop3fry3Gw10nM12ihrUlANeKX/view?usp=sharing ประชาสัมพันธ์ Page facebook: - คณะวิทยาศาสตร์ มหาวิทยาลัยแม่โจ้ - สโมสรนักศึกษาคณะวิทยาศาสตร์ มหาวิทยาลัยแม่โจ้ - กาดแม่โจ้ 2477 Impact - นักศึกษาคณะวิทยาศาสตร์ มหาวิทยาลัยแม่โจ้ - ชุมชน / เกษตรกร

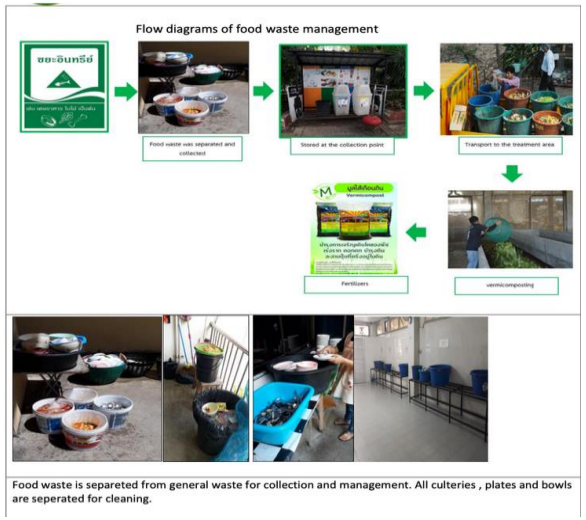
The project "Free Meals from Maejo University During COVID-19"

The project "Free Meals from Maejo University During COVID-19" started on September 16, 2012 with the objective to help poor students who needed supports and they lacked of important living factors. Each year 200-300 students has been supported, the project was funded by alumni and university. It reflects the roots, identity, and culture of Maejo University. During the pandemic of COVID-19 crisis, most students have been in trouble, Maejo University with support from Maejo alumni across the country distributed free meals every day at 11:00 am from the 22-30 April 2020 at the main entrance in front of Maejo University, over 4,200 people were relieved from hunger.

Service Project on Solar Energy Technology in Communities

"Training on Renewable Energy, Mobile Solar Water Pump Technology" had a purpose to promote and transfer the technology of mobile solar water pumps to the agricultural community, support the use of mobile solar water pump technology to replace the use of oil and electricity, increase the capacity of sustainable agriculture and to encourage participants to have the skills, knowledge and understanding of renewable energy and solving problems after the implementation of the technology. Target group were 10 agricultural communities, altogether 586 participants in 5 provinces, including Chiang Mai, Chiang Rai, Lampang, Lamphun and Phayao provinces. The project was divided into 4 activities as follows: Activity 1 Setting up the criteria for selecting agricultural communities and surveying the area to assess the potential of using solar pumping system technology to be used, and create a technology demonstration kit. Activity 2 Organising a workshop on mobile solar water pump technology Activity 3 Following up on the project results in areas that have been transferred the mobile solar water pump technology. Activity 4 Evaluation of the project performance and preparation of public relations documents. The project brought students to join in with an integration of teaching and learning. It was a study outside the classroom and doing activities with the communities.

2 ZERO HUNGER



Food waste is separeted from general waste for collection and management. All culteries , plates and bowls are seperated for cleaning.

Campus food waste and vermicomposting

For the food waste generated from the campus, almost 150 kg./day of food waste were separated and collected from each canteen and food shop for treatment. Food waste from the collection points were then transferred to vermicomposting area for fertilizer production. This process has been pioneered by Prof.Dr. Arnat Tancho. https://www.facebook.com/maejonaturalfarming/

Sustainable Agriculture; The King's Philosophy

The Faculty realised the importance of the Philosophy of Sufficiency Economy. Therefore, a sustainable agricultural system project was organised according to the King's Philosophy to raise awareness of staff, students and the community to live and practice according to the principles of Sufficiency Economy by integrating with teaching and learning management and integrating with the Growing Vegetable for Tuition Fees, by creating fisheries graduates, expert practitioners and keeping up with modern technology through hands-on practice (November 2019 - August 2020), Starting with the improvement of the agricultural area, pond preparation and agricultural plots (vegetable planting, papaya cultivation), farming of tilapia, catfish, fish processing, as well as distribution of produce in fresh market in Maejo University.
https://erp.mju.ac.th/projectAssessFrm.aspx?goID=27&pid=15727

A Sustainable Canteen for Everyone on Campus

Terdkasikorn canteen in Maejo University serves over 14,420 students in the academic year 2019. There are over 50 food, drink and snack shops including vegetarian foods serving at a present. They need to follow the regulations and and fair use of the campus area. There are rules and regulations in the distribution of standard products. The price is controlled at 20-35 baht and has appointed a committee to inspect sanitation standards for food and beverages according to the conditions of the Ministry of Public Health. The shops must follow the criteria and methods of operation for Green University and the green office.

2 ZERO HUNGER

Growing Vegetables to Earn Tuition Fees (Student Farms for Fee Project)

The project of growing vegetables to earn tuition fees aimed to students the agricultural techniques from real practice outside the classroom. Students could earn some money for tuition fees. The university faculties integrate teaching and learning to create graduates who have skills, knowledge, ability and be ready a social entrepreneur. The project achieves the needs of the market as part of the production activities for health-conscious consumers. The produce from the projects was sold in a university local market. More than 100 students joined in the project. The cost of the project was over 82,500 USD (2,500,000 baht). www.facebook.com/ปลูกผักแลกค่าเทอม-106995974323471

Ensure healthy lives and promote well-being for all at all ages

Maejo University has worked collaboratively with other organization to run projects that ensure healthy lives and promote well-being for all, at all ages. The three most significant impacted projects are:

1) Maejo Local Wisdom Herbaceous Medical Plant Learning Center Project

2) The Using Capability of Native Edible Plants in Suburb Area of Chiang Mai for Landscape Design

3) Sustainable Green Environment Community Project

3 Projects

Maejo Local Wisdom Herbaceous Medical Plant Learning Center Project

Maejo Local wisdom herbaceous medical plant learning center project.

1) The ultimate goals of Plant Genetic Conservation Project Under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn are development of personnel and conservation and development of plant genetics resources.

2) Surveying and collecting the local plant genetic resource to promote understanding the local wisdom of native herbaceous plant species and organization the Local Wisdom Herbaceous Medical Plant Center.

3) The Local Wisdom Herbaceous Medical Plant Center will be support the utilization framework for surrounding communities and accessible Northern area of Thailand.

4) This project will conduct the supporting Plant Genetic Resource learning center to support activities for understanding and awareness the importance of local plant genetic resource.

The Using Capability of Native Edible Plants in Suburb Area of Chiangmai for Landscape Design

The Using Capability of Native Edible Plants in Suburb Area of Chiangmai for Landscape Design

1) The ultimate goals of Plant Genetic Conservation Project Under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn are development of personnel and conservation and development of plant genetics resources.

2) To study the potential edible plant species in Chiangmai and to build the plant genetic database system.

3) The using capability of native edible plants in landscape design 4) The conceptual framework guideline of edible landscape design in residence landscape.

Green Environmental Sustainable Community Project

The main objectives of the Sustainable Green Environment Community Project are

1) To service and collaborate with the Government agencies, private sections, and the communities around Maejo University,

2) To promote the integration of applying academic purposes with social service and research approaches, and

3) To apply the Architectural basis, Landscape Architectural Principles and Landscape Technology benefits for serving the sustainable green environment community plan.

โครงการบูรณาการวิชาการแก่ชุมชน "ชุมชนรักษ์โลก"
กิจกรรมที่ 1 อบรมเชิงปฏิบัติการ ขั้นตอนการออกแบบ ศูนย์กีฬาและนันทนาการเพื่อส่งเสริมสุขภาพ
ชุมชน วันที่ 22 – 23 มิถุนายน 2563 ณ เทศบาลตำบลสันป่าเปา ตำบลสันป่าเปา อำเภอสันทราย
จังหวัดเชียงใหม่ และคณะสถาปัตยกรรมศาสตร์และการออกแบบสิ่งแวดล้อม มหาวิทยาลัยแม่โจ้


ลงทะเบียนผู้เข้าร่วมกิจกรรมโครงการ


ปรึกษานารือแนวทางการพัฒนาพื้นที่ศูนย์กีฬาฯ


นายกเทศมนตรีเทศบาลตำบลสันป่าเปากล่าวเปิดโครงการ


เยาวชนผู้ใช้พื้นที่เข้าร่วมกิจกรรมและให้ข้อมูล


ผู้บริหารและผู้นำชุมชนร่วมระดมความคิดเห็น


นักศึกษาปฏิบัติการร่างแนวคิดในการออกแบบ

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Maejo University is an agriculturally-based higher education institute. We aim to be a university that connects with people, communities and the world in everyday life. Our target is to become 'The University of Life' in order to serve the global community with the following emphasis:

1. Agricultural- based Development
2. Nature and Environment Conservation
3. Tradition and Culture Preservation
4. on of Morality and Good Governance

6,055 people in disadvantage participated
2 Short-term international programs
19 life-long learning projects
5 Projects

Master's Programs and Advanced Technical Short-Term Trainings in Rural Development and Management for the Ministry of Agriculture and Forests Kingdom of Bhutan

Master's Programs and Advanced Technical Short-Term Trainings in Rural Development and Management for the Ministry of Agriculture and Forests Kingdom of Bhutan

Table 2 The effects of organic feed on feed cost and income (n=4, Mean ± SEM)

Items	Group				
	Commercial	Control	Organic1	Organic2	P-value
Feed cost (USD/bird)	1.32±0.05[b]	1.18±0.005[b]	1.74±0.09[a]	1.83±0.14[a]	0.001
Feed cost (USD/Kg BWG)	0.59±0.01[b]	0.73±0.05[b]	1.53±0.12[a]	1.59±0.08[a]	0.000
Cost of feed and strain (USD/bird)	1.69±0.05[b]	1.54±0.05[b]	2.11±0.08[a]	2.19±0.14[a]	0.001
Income over feed cost (USD/Kg BWG)*	0.79±0.01[b]	0.65±0.05[b]	2.61±0.13[a]	2.94±0.24[a]	0.000
Income over feed cost and strain (USD/bird)*	0.43±0.01[b]	0.29±0.05[b]	2.25±0.13[a]	2.57±0.24[a]	0.000

BWG; body weight gain

[a,b] in the same row show statistically differences (P<0.05)

The using of organic feed in broiler production

The effects of organic feed ingredients on production performance and carcass characteristics and price and income for organic chickens were studied in male broilers, and compared with those of a conventional production system. Newly hatched male broiler chicks were divided into four groups with four replicates of 12 birds each: (1) birds fed a commercial diet (commercial); (2) birds reared with our own made diet consisting of nonorganic conventional feed ingredients (control); (3) birds fed 95 percent organic diet consisting of organic corn and full-fat soybean meal (organic 1); and (4) of organic broken brown rice in addition to the organic 1 group (organic 2). At 42-d of age, the weight of carcass, each meat part, and visceral organs was measured. Compared with the commercial group, the organic groups decreased feed intake, body weight gain, feed efficiency, and carcass yield ($P < 0.05$) increased visceral organs ($P < 0.05$) (Table 1) but costs and income for chicken increased ($P < 0.05$) (Table 2). These results suggest that the present organic feed design seems to be a good model for organic broiler production and contributes to farmer profits.

Eco-Tourism Training and Cultural Exchange Program for Students from Miami University

On the 12th of January 2020, the Acting President of Maejo University, Associate Professor Dr. Weerapon Thongma delivered a certificate of attendance to 27 students from Miami University including professors that accompanied them. The certificate was the completion of a cross-cultural exchange program, Theme: "Eco-Tourism Training and Cultural Exchange Program." This allows the Miami students to experience the purity and richness of Thai culture and its environs. One of the features of the program was to promote, respect, and deepen understanding of different cultures while strengthening relations. The participated students learn from each other cooperatively. There is a mutual understanding of each other's way of life which then has become the promotion of international friendship and goodwill. More info: https://mju-ic.mju.ac.th/wtms_newsDetail.aspx?nID=22152 https://www.facebook.com/MaejoUniversityInternationalCollege/posts/606506196832056

Academic Support, Follow-Up, and Lesson Learning from an Experimental System of Labor Skill Development in Needy and Disadvantaged Communities Based on Funding from the Equitable Education Fund Project

The School of Administrative Studies under the leading of Dr. Somkid Kaewthip has implemented a project entitled, “Academic Support, Follow-Up, and Lesson Learning from an Experimental System of Labor Skill Development in Needy and Disadvantaged Communities Based on Funding from the Equitable Education Fund” in the fiscal years of 2019 and 2020. Currently, in Thai society, the working-age population often suffers from unemployment due to the economic downturn causing these groups of workers to be laid off and move back to their homeland a lot. In addition, workers who are still employed in workplaces are considered as unskilled or low skilled workers due to a lack of skill development to be consistent with and link the economy, community, and labor market. Besides, there was a problem of educational disparity, resulting in the working-age population with Lower Secondary Education qualifications or lower have lower incomes than those with a degree or higher. As a result, there are many disparities in various areas such as income inequality, employment, and professional skill development. The objectives of this project are 1) to reinforce, design, and create a participatory learning process for the professional development unit, 2) to support and develop mechanisms for driving the career development unit to have the potential for learning management, 3) to manage knowledge in labor skill development of the development unit career, 4) to create a network of professional development units to drive collaborative learning, and 5) to synthesize lessons and develop policy recommendations for the development of labor skills for occupational development units and labor groups who are poor and disadvantaged. The project has been undertaken cooperatively with the various networks nationwide in recruiting participants through EEF (Equitable Education Fund). At present, there are many related projects under the care of Maejo University from every region. There are 74 career development units covering 5 regions, namely the North, the Central, the West, the North-East, and the South, including 42 provinces nationwide. The participants receive funding to return to their homeland for creating job opportunities and building communities by helping the needy and disadvantaged. They are expected to develop skills, knowledge, and ability to work according to their aptitude and the potential to be self-reliant ultimately. In addition, they are hoped to be able to survive, coexist, and live meaningfully in their community and society through the development of life skills in household economics, management skills for the 21st century, career networking, occupational and entrepreneurial skills, career skills along the path, community-based career advancement, etc.

The project has a mechanism to follow-up and to provide support from mentors from all four regions right from the upstream, midstream, and downstream processes to make the career development units achieve successful implementation of the project, and to achieve the goals of EEF. There were 6,055 needy and disadvantaged persons participating in the project and they could be divided into 2,175 system workers, 1,236 unemployed, 601 elderly persons, 622 imprisoners, 254 disabled persons, 284 state welfare cardholders, and 883 persons in other categories (like youth parents/youths/housewives/community enterprises). It was found that the project could develop occupations for the persons in the shortage and disadvantaged groups in 6 independent careers, namely: agriculture, processing, handicrafts and crafts, handicraft, entrepreneurs, and hospitality and tourism. As a result, it was found that there were significant impacts on the target groups and local communities. There were career development curricula that matched the target group's needs, there were products developed from resources available in local communities, community economic development, products derived from local wisdom by combining 21st-century knowledge for product design. The packaging was unique and created a reputation for each area in every region of Thailand. The project created entrepreneurial career development established a network of entrepreneurs, created platforms, marketing, and target products. It could make the participants reduce their expenses, increase income, able to support themselves and their families, and their life valuable and happy. Moreover, the project could stem out outstanding career development units all over the country to extend the main project under the 2020 community-based innovation and career development funds. At present, there were 19 projects, covering 4 regions for such a main purpose and they had been evaluated and monitored by mentors and experts in various fields from 4 sectors (government/academia, private, mass media, and community expert sectors). The project had been considered and approved for funding for 2020. To sum up, the project can be considered as an extension of the operations to enhance the development of professional skills, to expand the area and scope of work of the professional development units, to create jobs, create careers, strengthen the community economy, to reduce disparity, and to enhance the quality of life of the people in the community to be happy based on community-based career development. For more information, you can follow the development of the project at https://www.facebook.com/community.base.eef

Achieve gender equality and empower all women and girls

Maejo University values the importance of the Philosophy of Sufficiency Economy by the late King Bhumibol Adulyadej. Our sustainable agricultural system project was organized according to this particular philosophy. We aim to raise social awareness on Sufficiency Economy to our staff, students and the community. To achieve the goal, we integrate the philosophy into teaching and learning management. More integration can be seen in many of our activities such as Project of Growing Vegetable for Tuition Fees, agricultural expert practices and organic technology practices, etc.

34.60% Students Recieved Financial Aid
50 Food Shops on Campus
3 Projects

Sustainable Agriculture; The King's Philosophy

The Faculty realized the importance of the Philosophy of Sufficiency Economy. Therefore, a sustainable agricultural system project was organized according to the King's Philosophy to raise awareness of staff, students and the community to live and practice according to the principles of Sufficiency Economy by integrating with teaching and learning management and integrating with the Growing Vegetable for Tuition Fees, by creating fisheries graduates, expert practitioners and keeping up with modern technology through hands-on practice (November 2019 - August 2020), Starting with the improvement of the agricultural area, pond preparation and agricultural plots (vegetable planting, papaya cultivation), farming of tilapia, catfish, fish processing, as well as distribution of produce in fresh market in Maejo University.

A Sustainable Canteen for Everyone on Campus

Terdkasikorn canteen in Maejo University serves over 14,420 students in the academic year 2019. There are over 50 food, drink and snack shops including vegetarian foods serving at a present. They need to follow the regulations and fair use of the campus area. There are rules and regulations in the distribution of standard products. The price is controlled at 20-35 baht and has appointed a committee to inspect sanitation standards for food and beverages according to the conditions of the Ministry of Public Health. The shops must follow the criteria and methods of operation for Green University and the green office.

The program of impoverished student financial aids

In the academic year of 2019, there were 14,420 students attending Maejo University. The university always promotes and supports the educational funds for all impoverished students. There were 4,989 students (34.60% of all students) receiving this financial aid. Student Loan Fund or Income Contingent Loan: ICL are opened for all students to apply for it. In 2019, it was given to needy students 183,677,300 baht (6,122,576$). Other 491 scholarships were provided at a price of 10,784,400 baht (359,480$). In summary, Maejo University allocated educational funds worth 194,461,700 baht (6,482,056. $) in total during this academic year.

5 GENDER EQUALITY

Ensure availability and sustainable management of water and sanitation for all

Maejo University has policies for water management and sanitation.

The projects aim to ensure availability and sustainable management of water and sanitation for all.

187,200 cubic meter of surface water

390 individuals from 25 organizations/agencies networking on water management and sanitation

8 Projects

Enhancing Participation in Water Resource Management for Sustainable Agriculture and Consumption in Upstream Forest Communities at Galyani-Wattana District in Chiang Mai Province Project

The School of Administrative Studies under the leading of Dr. Somkid Kaewthip has implemented a project entitled “Enhancing Participation in Water Resource Management for Sustainable Agriculture and Consumption in Upstream Forest Communities at Galyani-Wattana District in Chiang Mai Province” funded by the Office of Agricultural Research and Development (Public Organization) in the fiscal year 2019 and completed in 2020. Based on a study and a review of work on solving water resource management problems in Galyani-Wattana District in Chiang Mai Province, it was found that the creation of awareness processes and the creation of community participation in the area in water management for agriculture and consumption in the area was still little and discrete. Therefore, the project has been undertaken 1) to study and collect data on water resources management in upstream forest communities in Galyani-Wattana District in Chiang Mai Province, 2) to strengthen the participation process of the public, government, private, and civil society sectors in the application of royal initiatives and local wisdom for the management of water resources in the upstream forested community areas in the aforementioned district, and 3) to develop a process model for enhancing cooperation in water resource management in the mentioned upstream forest communities. The tools for data collection consisted of interviews, participatory observations, small group discussions, knowledge exchange forums, and in-depth interviews. Key informants for the research study were: 90 community leaders who had roles or were involved in water resource management, 300 representatives of the people in the model village of water resource management, representatives from 15 organizations/agencies working within the area, and those from 10 organizations/agencies outside the area. Therefore, a total of 390 persons from 25 organizations/agencies were included. The data obtained from the field survey as qualitative research were. analyzed to find consensuses. Most of the obtained data were in the form of descriptions based on observations, interviews, and notes. The research team verified the data through triangulation. It was found that 2 main groups of factors for strengthening the participation process in the management of community water resources on the highland were 1) factors leading to the success of water management, and 2) factors limiting water management. The first group of factors consisting of: 1. Relationships, structure and operational roles of the Water Resources Management Committee, 2. Mechanism building for the participation of the public sectors in the management of water resources on the highland, 3. Focusing on building a shared awareness of ownership of community resources, 4. Adaptation of water used for agriculture in line with community ecosystems, 5. Water resource management, creating understanding and prevention of conflicts, 6. Establishing rules and regulations for water resource management for essential use of water and conservation of community watersheds, 7. Participating in active community water resource management on the highland, 8. The roles of community leaders are important for the management of water resources in the highland communities, and 9. The development of wisdom towards shallow-pond water management in the household.

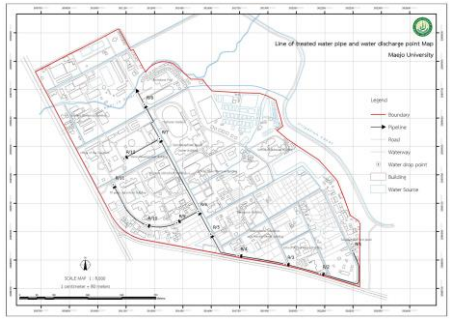
The second group of factors consisting of: 1. The increasing number of households, government buildings, and business workplaces, 2. Non-decentralization and stabilization of local government organizations, 3. Water shortages for use and consumption due to unsystematic management of water resources, 4. Changes in people’s water consumption behavior and water consumption of communities, 5. Limitation of water resource management in the national forest reserve area. and 6. Climate changes affecting highland communities. The results from the application of research knowledge to the communities caused the administration and maintenance of the village water supply system which is the property of Village No. 4, Ban Mae Daet Noi, Ban Daet Sub-district, Galyani-Wattana District in Chiang Mai Province. It could provide basic services necessary for livelihoods and improve the quality of life of people in the mentioned village effectively, and the villagers were jointly responsible for the management and maintenance of the village mountain water supply in a management manner by their expenses. As for the water resource management development plan, the community development plan for water resource management of Ban Mae Daet Noi community was established. This was an important agenda for the community in planning the development of community water management. The organization in the area and the network partners could formulate a collective agreement on the development of community plans, namely water management plans for use and consumption, a water management plan for agriculture in community areas, and the villagers could set up and run a water fund for effective water management. In addition, very importantly, it also used the principles of creating spiritual value rather than money by letting the community design the rules and regulations for paying for water maintenance in the form of items, or agricultural plants and products such as housewives' woven cloth, rice, avocado, etc. As a result, water management was a tool of water fund management to generate income for people in the community, and this could develop water funds continuously. As for water management for agriculture, it made the agriculturists adapt to the use of water, and adjust farming to be suitable for the area, such as digging shallow wells in farms, growing legumes or plants that use less water, adding more horticulture (avocado, mango, coffee) or raising animals for career-building (cattle, pigs, and chickens), etc., These could generate the income for the agriculturists and people in the community continuously. They could also gain incomes from various means resulted from managing areas for water use for agricultural purposes. For more information, you can learn from the development of the aforementioned project from the video clip on Water Management, Parts 1 and 2 at the websites below: https://www.youtube.com/watch?v=BDXhqpfgrM0&fbclid=IwAR1j2E98SikJFdzgwc7iB0aWowrtaNjTDVF1pFOKoWkIU1kTfYwo_AufY-w and https://www.youtube.com/watch?v=w2ERy1tQ7-Y&fbclid=IwAR3inbVHRa13pLkylLo39Kq1oX2k0rS4ZkjGLvJtgS0WOY8nGS526F8ugcI การบริหารจัดการน้ำ ตอนที่ 1 https://www.youtube.com/watch?v=BDXhqpfgrM0&fbclid=IwAR1j2E98SikJFdzgwc7iB0aWowrtaNjTDVF1pFOKoWkIU1kTfYwo_AufY-w การบริหารจัดการน้ำ ตอนที่ 2 https://www.youtube.com/watch?v=w2ERy1tQ7-Y&fbclid=IwAR3inbVHRa13pLkylLo39Kq1oX2k0rS4ZkjGLvJtgS0WOY8nGS526F8ugcI

Water Sources in the Community

Raw water from the Mae Faek-Mae Ngat Somboonshon Operation and Maintenance Project and natural canals running through the university. Currently, there are sufficient surface water sources for both the water supply system and agriculture.

Water Reuse

The effluent from the treatment plant is further reused for landscape irrigation and agricultural purposes. Approximately 1000 m3 / d. of effluent was produced and more than 60% was collected in the pond nearby. This storage water has been used for landscape irrigation and horticulture crop during dry season in the campus. The remained 500 m3 of water has been used for grassy area through the PVC piping system. Moreover, the pilot model of ecological sanitation or ecosan has been applied and installed at 7 main buildings (main canteen, Sport complex, 70 year study center, 80 year study center, agricultural faculty, swimming pool and Chootiwat building) with the total amount of 303 toilets. This project aimed to safely reuse excreta for landscape management inside the campus. In year 2020, a new project of design and construction of new treatment plant for upcycle the effluent from the current wastewater treatment plant was approved and launched with the budget of 18 million bath.



Water Sources

Maejo University has a 75,000-cubic meter raw water pond that supplies water for water supply Plant 1; a 20,000-cubic meter pond that provides water for water supply 2; a 32,200-cubic meter pond that supplies water for water supply Plant3; a 60,000-cubic meter pond that is used for agricultural purposes; as well as the Mae Faek-Mae Ngat Somboonshon Operation and Maintenance Project and natural canals running through the university. Currently, there are sufficient surface water sources for both the water supply system and agriculture. All together, the total amount of surface water is 187,200 cubic meter.

No.	Position	Volume (m^3)
1	Lanna agriculture learning center	4,335
2	New theory agriculture learning center	4,470
3	Engineering Laboratory Building Classroom	1,196
4	Thummasakmontri Building 1	2,900
5	PTT Oil Station 1	2,912
6	PTT Oil Station 2	1,372
7	Thummasakmontri Building 2	740
8	Water supply pond	7,560
9	Agricultural area	1,196
10	water supply plant	1,475
11	Fishery Thchnology Laboratory Building	4,302
12	Smithanon Building	73
13	Mekong giant catfish learning center 1	39,495
14	Mekong giant catfish learning center 2	22,824
15	Mekong giant catfish learning center 3	5,902
16	Mekong giant catfish learning center 4	1,528
17	Rest home	1,431
18	70th year maejo building 1	2,457
19	70th year maejo building 2	1,579
20	Production of Ornamental Plants Technology	832
21	Dean office 1	420
22	Dean office 2	800
23	Maejo shirne	240
24	Kaset sanahn pool 1	2,850
25	Kaset sanahn pool 2	2,850
26	Female dormitory 8	9,720
27	Female dormitory 8	17,124
28	Faculty of Animal Science and Technology 1	1,050
29	Faculty of Animal Science and Technology 2	900
30	Faculty of Animal Science and Technology 3	1,350
31	School of Renewable Energy 1	147
32	School of Renewable Energy 2	4,870
33	Cow farm	36,300
	Total	**187,199**

Wastewater Recycling Program 1

The pilot model of ecological sanitation or ecosan has been applied and installed at 7 main buildings (main canteen, sport complex, 70 year study center, the 80 years study center, agricultural faculties, swimming pool and Chootiwat building) with the total amount of 303 toilets. This project aimed to safely reuse excreta for landscape management inside the campus. Approximately 1000 m3 / d. of effluent was produced and more than 60% was collected in the pond nearby. This storage water has been used for landscape irrigation and horticulture crop during dry season in the campus. The remained 500 m3 of water has been used for grassy area through the PVC piping system. Sludge from the treatment plant was stabilized and dried before using as soil amendment for agricultural purpose.

Installation of ecological sanitation in 80 year building

Separated urinate was used for landscape management in the campus

Reuse of treated wastewater for landscape management

Water Consumption and Treatment in the Campus in 2020

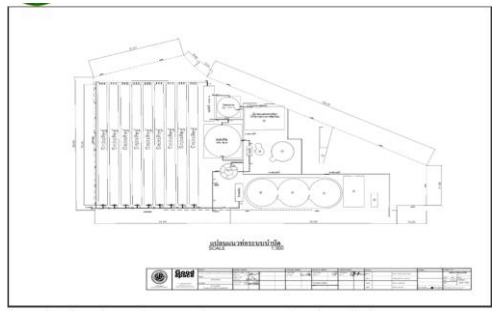
Maejo University has four ponds for consumption in the campus. They are a 75,000-cubic meter raw water pond that supplies water for water supply Plant 1; a 20,000-cubic meter pond that provides water for water supply 2; a 32,200-cubic meter pond that supplies water for water supply Plant 3; a 60,000-cubic meter pond that is used for agricultural purposes. All together, the total amount of surface water is 187,200 cubic meter. Meanwhile, Maejo University uses tap water for 1,083,003 cubic meter and treated water for 406,178 cubic meter in this year.

Another alt text

Month - Year	Tap water supply (m^3)	Treated water (m^3)
Jan-20	95,656	36,455
Feb-20	98,931	35,309
Mar-20	107,118	34,698
Apr-20	96,572	27,709
May-20	81,747	27,742
Jun-20	56,222	22,222
Jul-20	69,151	31,741
Aug-20	96,351	37,827
Sep-20	98,430	36,635
Total	**1,083,003**	**406,178**

Wastewater Recycling Program 2

In year 2020, a new project of design and construction of new treatment plant for upcycle the effluent from the current wastewater treatment plant was approved and launched with the budget of 18 million baht



New project of upcycle treated wastewater for water conservation to be used in the campus .

Water Conservation Program Implementation

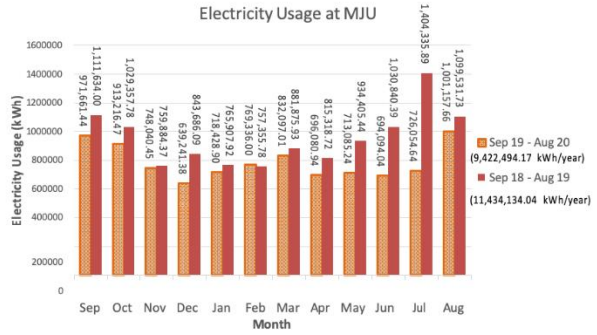
Maejo University has a 75,000-cubic meter raw water pond that supplies water for water supply Plant 1; a 20,000-cubic meter pond that provides water for water supply 2; a 32,200-cubic meter pond that supplies water for water supply Plant3; a 60,000-cubic meter pond that is used for agricultural purposes; as well as the Mae Faek-Mae Ngat Somboonshon Operation and Maintenance Project and natural canals running through the university. Currently, there are sufficient surface water sources for both the water supply system and agriculture.

7 AFFORDABLE AND CLEAN ENERGY

Ensure access to affordable, reliable, sustainable and modern energy for all

Maejo University carried out projects to ensure affordable, reliable, sustainable and modern energy for all.

Fig. 2.2 Electricity usage per year of MJU in 2020 compared with electricity usage in 2019



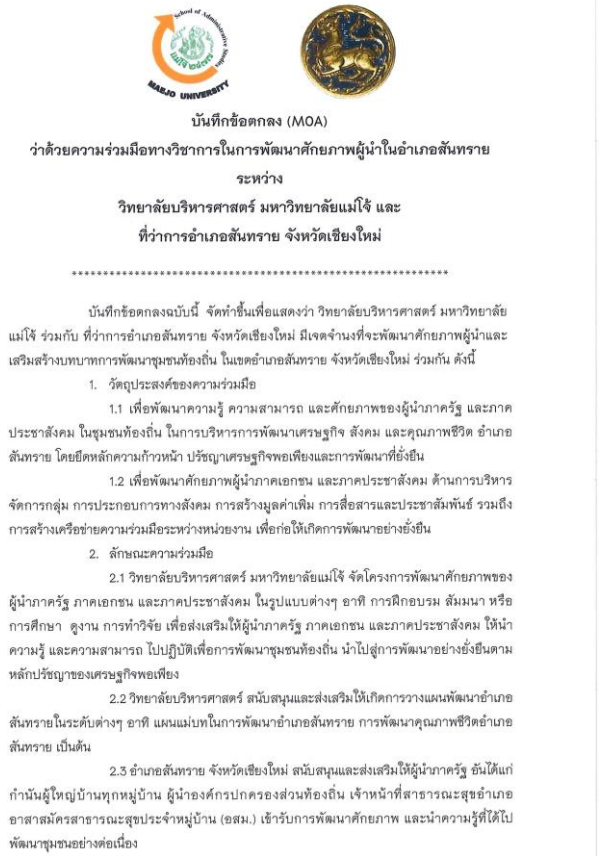
2,721,491.36 kWh/year renewable energy production (28.88 %)
Multi-modes of renewable energy production
11 Projects

Driving Academic Service to Ban Wang Chomphu Community, Saraphi District, Chiang Mai Province

The Faculty of Fisheries has strengthened local fishery communities in Chompoo Sub-district, Saraphi District, Chiang Mai Province. The project aims to promote and develop career in the community by training people to have problem solving skills and have alternative careers. The faculty held a training program, “The Integration of Snakeskin Gourami Fish Farming in Biofloc Technology System with Vegetables Production for Commercial to Develop Food Industrial in Northern Region” by Assistant Professor Dr. Jongkon Phomya as the project leader, on July 12th, 2019 at Muang Jai Organic Farm, Chompoo Sub-district, Muang District, Chiang Mai Province.

The development of the capacity of local

community leaders in the management of economic, social and quality of life development in San Sai District using the Sufficiency Economy Philosophy and Sustainable Development



บันทึกข้อตกลง (MOA)
ว่าด้วยความร่วมมือทางวิชาการในการพัฒนาศักยภาพผู้นำในอำเภอสันทราย
ระหว่าง
วิทยาลัยบริหารศาสตร์ มหาวิทยาลัยแม่โจ้ และ
ที่ว่าการอำเภอสันทราย จังหวัดเชียงใหม่

****

บันทึกข้อตกลงฉบับนี้ จัดทำขึ้นเพื่อแสดงว่า วิทยาลัยบริหารศาสตร์ มหาวิทยาลัยแม่โจ้ ร่วมกับ ที่ว่าการอำเภอสันทราย จังหวัดเชียงใหม่ มีเจตจำนงที่จะพัฒนาศักยภาพผู้นำและเสริมสร้างบทบาทการพัฒนาชุมชนท้องถิ่น ในเขตอำเภอสันทราย จังหวัดเชียงใหม่ ร่วมกัน ดังนี้

1. วัตถุประสงค์ของความร่วมมือ

1.1 เพื่อพัฒนาความรู้ ความสามารถ และศักยภาพของผู้นำภาครัฐ และภาคประชาสังคม ในชุมชนท้องถิ่น ในการบริหารการพัฒนาเศรษฐกิจ สังคม และคุณภาพชีวิต อำเภอสันทราย โดยยึดหลักความก้าวหน้า ปรัชญาเศรษฐกิจพอเพียงและการพัฒนาที่ยั่งยืน

1.2 เพื่อพัฒนาศักยภาพผู้นำภาคเอกชน และภาคประชาสังคม ด้านการบริหารจัดการกลุ่ม การประกอบการทางสังคม การสร้างมูลค่าเพิ่ม การสื่อสารและประชาสัมพันธ์ รวมถึงการสร้างเครือข่ายความร่วมมือระหว่างหน่วยงาน เพื่อก่อให้เกิดการพัฒนาอย่างยั่งยืน

2. ลักษณะความร่วมมือ

2.1 วิทยาลัยบริหารศาสตร์ มหาวิทยาลัยแม่โจ้ จัดโครงการพัฒนาศักยภาพของผู้นำภาครัฐ ภาคเอกชน และภาคประชาสังคม ในรูปแบบต่างๆ อาทิ การฝึกอบรม สัมมนา หรือการศึกษา ดูงาน การทำวิจัย เพื่อส่งเสริมให้ผู้นำภาครัฐ ภาคเอกชน และภาคประชาสังคม ให้นำความรู้ และความสามารถ ไปปฏิบัติเพื่อการพัฒนาชุมชนท้องถิ่น นำไปสู่การพัฒนาอย่างยั่งยืนตามหลักปรัชญาของเศรษฐกิจพอเพียง

2.2 วิทยาลัยบริหารศาสตร์ สนับสนุนและส่งเสริมให้เกิดการวางแผนพัฒนาอำเภอสันทรายในระดับต่างๆ อาทิ แผนแม่บทในการพัฒนาอำเภอสันทราย การพัฒนาคุณภาพชีวิตอำเภอสันทราย เป็นต้น

2.3 อำเภอสันทราย จังหวัดเชียงใหม่ สนับสนุนและส่งเสริมให้ผู้นำภาครัฐ อันได้แก่ กำนันผู้ใหญ่บ้านทุกหมู่บ้าน ผู้นำองค์กรปกครองส่วนท้องถิ่น เจ้าหน้าที่สาธารณะสุขอำเภอ อาสาสมัครสาธารณะสุขประจำหมู่บ้าน (อสม.) เข้ารับการพัฒนาศักยภาพ และนำความรู้ที่ได้ไปพัฒนาชุมชนอย่างต่อเนื่อง

Employment of people in areas affected by COVID-19 pandemic Project

Detail: This project was aimed to employ people who were coping with job loss caused by the coronavirus disease 2019 (COVID-19) pandemic. 455 people were employed in employment phase 1 and phase 2. They were empowered by developing various work skills such as community analyzing and problem-solving, social innovation developing, conducting a survey and managing data, mapping community forests, developing innovative food. The project results showed that those employed in this project were responsible for area surveying, documenting community information, clarifying details, as well transferring, contributing and collecting related and necessary information, including problems and obstacles to support the area’s operations. The obtained data were analyzed and determined the operational plan together with the project advisor and community leaders. The body of knowledge and technology was reported in the form of information to promote and support main community problem-solving.

University Measurement towards Affordable and Clean Energy

One of Maejo University's essential action is to reduce energy usage by implementing the plan of encouraging to replace of conventional appliances with high-efficiency appliances. Recently, the university has been granted a budget from the Ministry of Energy to replace former air-conditioners and lighting systems with Inverter air-conditioners and LEDs. To align with the Term of Reference (TOR) of the Department of Alternative Energy Development and Efficiency, about half of fluorescents' light bulbs (18W - 36W) at the university have been changed to LEDs (9W – 18W) and several conventional air-conditioners have been changed to Inverter air - conditioners. Using renewable energy to replace conventional energy is an action that Maejo University has fully proceed making clean energy and a better environment for both the university and nearby communities. The university has been funded by governmental organizations encouraging renewable energy usage. In recent years, the university has been employed five different types of renewable energy such as biomass, biogas, solar power, wind power, and biodiesel replacing the conventional source of electrical energy. In terms of biogas, the biogas production system has been installed with 653 m2 capacity generating methane gas for making the electricity to use inside the university. Also, the biomass and organic Rankine cycle (ORC) production system have been applied from residue derived fuel (RDF) to produce the electricity by a gas generator. The biodiesel production system of which is 150 liters capacity has been installed at the School of Renewable Energy generating biodiesel to apply the diesel generator. In addition, Solar power systems have been installed on lots of buildings at the university in order to generate electricity. As well as solar collector systems, have been installed on all dormitories and International Education and Training Center at the university to replace the conventional water heaters. Furthermore, wind power has been installed upon the street light systems to generate electricity to the battery and apply it at night. Another application of the wind turbine is to generate as a power plant in order to generate electricity. The university has continuously indicated the intention and determination to use renewable energy as an alternative source so that it has saved electricity costs and has made a better environment for both the university and nearby communities.

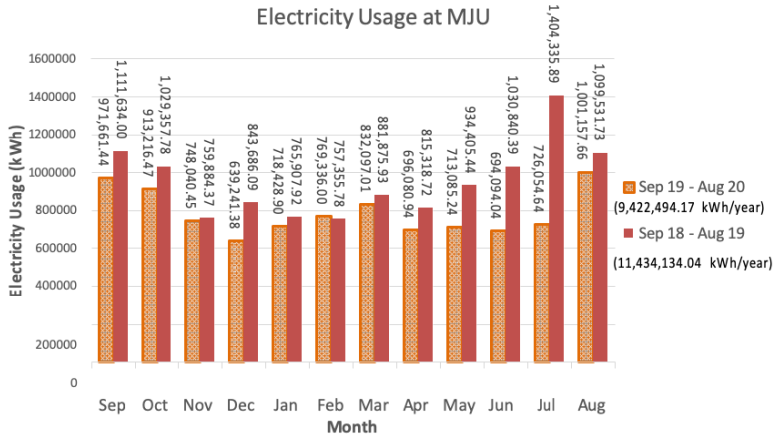
- **Biogas**

Faculty of Animal Science	School of Renewable Energy
	
Biogas production system with the capacity of 650 m^3 for electricity generation	Biogas production system with the capacity of 3 m^3

Energy Used Density

In recent years, the total electricity consumption per year of Maejo University is 9,422,494.17 kWh (September 2019 to August 2020) that is less than last year (11,434,134.04 kWh) around 21.35%. In 2020, The electricity would be slightly increased from January to March close to the previous year's electricity usage. According to Measures on preventing the spread of coronavirus disease 2019 from the Ministry of Health in April, the university would take actions to respond to the measures such as Working from Home, Online Courses for students, Swapping working days for personnel, etc. These actions would decrease the energy usage inside the university in April, May, June, and July. Especially in July, it would be half less compared with the previous year. That is why electricity consumption during September 2019 and August 2020 is decreased by approximately 21 % compared with the previous year's electricity consumption. In this section, it is desired to determine the amount of electricity used on a yearly basis per person working and studying inside the campus. The total electricity consumption is divided by the total campus population is equal to 666.52 kWh/person. Maejo University has been using a greater portion of renewable energy in 2020, the total electricity consumption is 9,422,494.17 kWh/year, and the total renewable energy production at Maejo University is 2,721,491.36 kWh/year or 28.88 % of the total electricity consumption.

Fig. 2.2 Electricity usage per year of MJU in 2020 compared with electricity usage in 2019



Transportation Initiatives to Decrease Private Vehicles on Campus

Maejo University issues policies to decrease private vehicles on campus. The policies cover (1) free bike service operated and subsidized by the university as detailed in [5.9] and restricted bicycle lane in the main road network in the university (2) parking restriction area around the Office of President (2018-2020) and parking restriction on on-street parking as detailed in [5.14] aim to reduce vehicle entering to in the central of the university (Education Zone) (3) MJU Transit operated for free inside the university area aims to change travel behavior from private vehicle to public transit on the campus. Shuttle service is provided by the university, regular, and zero-emission vehicles.

Renewable Energy Produced on Campus Per Year

The productions of renewable energy compared to kWh/year is illustrated. Biogas production systems with 653 m3 capacity compensate 205,166.50 kWh/year electricity usage. as well as biomass and ORC power plant can replace 144,000 kWh/year. To consider the biodiesel production system, it has produced 3,132 liters of biodiesel/year which can secure 24,114.52 kWh/year electricity usage. Solar sources including solar power systems and solar collector systems are the most amount of electricity production generating at 2,336,340.54 kWh/year. Furthermore, wind power systems produce 11,869.80 kWh/year generating electricity and light. Therefore, the summary of the renewable energy produced on campus is around 2,721,491.36 kWh/year. Maejo University has been using a greater portion of renewable energy in 2020, the total electricity consumption is 9,422,494.17 kWh/year, and the total renewable energy production at Maejo University is 2,721,491.36 kWh/year or 28.88 % of the total electricity consumption.

- **Wind Power**

School of Renewable Energy

Solar and wind turbine hybrid system for street lighting (35 units)

Solar and wind turbine hybrid system for street lighting (35 units)

Wind turbine power generation, total capacity of 16.5 kW at MJU

Energy efficient appliances usage are replacing conventional

One of Maejo University's essential action is to reduce the energy usage by implementing the plan of encouraging to replace conventional appliances with high-efficiency appliances. Recently, the university has been granted a budget from the Ministry of Energy to replace former air-conditioners and lighting system with Inverter air-conditioners and LEDs. To align with Term of Reference (TOR) of Department of Alternative Energy Development and Efficiency, about half of fluorescents light bulbs (18W – 36W) at the university have been changed to LEDs (9W – 18W) and several conventional air-conditioners have been changed to Inverter air – conditioners.

Table 2.1 demonstrates the number and percentage of energy efficient appliances compared with all appliances in the campus. The sum of percentage of energy efficient appliances compared with all appliances in the campus is around 64 %.
Appendix 1 illustrates the Term of Reference (TOR) of Department of Alternative Energy Development and Efficiency changing the appliances.

Action	Total Number of Fluorescent light bulb before changing to LED	Total number of changing to energy efficient appliances (LED)	Percentage
Changing fluorescent light bulb to LED light bulb	54,894	26,498	48.27%
Action	Total Number of Conventional A/C	Total number of changing to Inverter A/C	Percentage
Changing from conventional A/C to Inverter A/C	2,881	454	15.76%
		Total Percentage	**64.03%**

Number of Renewable Energy Sources in Campus

Using renewable energy to replace the conventional energy is an action that Maejo University has fully proceed making clean energy and better environment both the university and nearby communities. The university has been funded from the governmental organizations encouraging the renewable energy usage. In the recent year, the university has been employed five different types of renewable energy such as biomass, biogas, solar power, wind power, and biodiesel replacing the conventional source of electrical energy. In term of biogas, the biogas production system has been installed with 653 m2 capacity generating methane gas for making the electricity to use inside the university. Also, the biomass and organic Rankine cycle (ORC) production system have been applied from residue derived fuel (RDF) to produce the electricity by gas generator. The biodiesel production system of which is 150 liters capacity has been installed at School of Renewable Energy generating biodiesel to supply the diesel generator. In addition, Solar power systems have been installed on lots of buildings at the university in order to generate the electricity. As well as solar collector systems,have been installed on all dormitories and International Education and Training Center at the university to replace the conventional water heaters. Furthermore, the wind power system has been installed upon the street light systems to generate electricity to the battery and the usage at night. Another application of wind turbine is to generate as a power plant in order to generate electricity. The university has continuously indicated the intention and determination using renewable energy as an alternative source so that it has saved the electricity costs and has made better environment for both the university and nearby communities.

- **Solar Power**

President's Office

Solar rooftop with the installed capacity of 20 kW

Solar rooftop the installed capacity of 90 kW

School of Renewable Energy

Solar rooftop at parking installed capacity of 40 kW

Additional Solar rooftop upon Renewable energy classroom building with 300 kW capacity

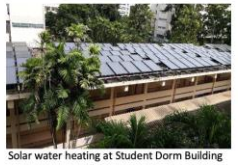
Solar rooftop at School of Renewable Energy installed capacity of 640 kW

Solar tracking station installed with capacity of 30 kW

- **Solar Collectors**

All Student Dormitories

Solar water heating station 1, area installed of 1,313 m^2 at Student Dorm Building



Solar water heating at Student Dorm Building

International Education and Training Center

Solar water heating station 2, area installed of 84.79 m^2

Energy storage of solar water heating on International Education and Training Center

Project on the Enhancement of Renewable Energy using Understanding for Farmers and Students in Highland Areas of Upper Northern Thailand to Reduce Smog

The project proponents have an idea to promote and support youth development in terms of knowledge. This is done by preparing a project on the enhancement of understanding about renewable energy using for farmers and students in highland areas of upper northern Thailand in order to reduce smog. It is done through activities of the Young Energy Smart Farmer Digital Thailand 4.0. It aims to transfer the body of knowledge related to agriculture, energy, smog problem reduction, and energy-smart farm technology. This is beneficial to youth farmers and new-age farmers in the future. Based on its details, the following are the objectives of the project:

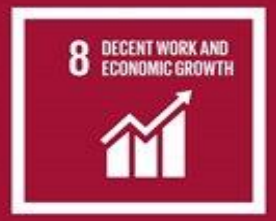
1) to promote the developed youths to be young energy-smart farmers in the future which is under the Digital Thailand 4.0 of the country. There were 69 students participating in activities of the Young Energy Smart Farmers Camp;

2) to enhance students' understanding of the smog problem reduction in upper northern Thailand through the training on agriculture- smart energy and using energy technology for smog problem reduction. The result of the project evaluation showed that 77% of participating students gain more knowledge from the training; and

3) to transfer knowledge about agriculture, energy, and innovation on energy-smart farm technology for students in upper northern Thailand. There were 1,040 secondary school students participating in the project activities.

Greenhouse Gas Emission Reduction Program

Maejo University is a comprehensive agricultural university, so the greenhouse gas emission programs taking care of the environment are very essential for both the university and nearby communities. Maejo University has willingly proceeded with the completed program throughout the year are categorized by greenhouse gas emission sources into 3 scopes. Scope 1: - Mobile Combustion Maejo University has continuously proceeded with the Car Free Day project that has been encouraging to use of bicycles as alternative vehicles for a short distance in every department. Furthermore, Bike-lane has been drawn around the university and the university has also provided bicycles for the staff to travel inside the university as complementary to reduce air pollution. In addition, Maejo University has begun the program of electric vehicle transportation inside the University for staff and students. In the beginning, Four EVs, as well as two routes, are ready to transport on weekdays except for holidays from 8:00 am. to 4:30 pm. Scope 2 : - Purchased Electricity Energy conservation awareness meeting: Staff in each division in Maejo University has attended for energy conservation awareness meeting with the expert to remind energy conservation awareness and set the energy conservation measures that are inspired by the staffs in the division to abide by the measures. Washing the university's air conditioners is an action which Maejo University has proceeded annually. In recent years, 365 air conditioners in the university have been washed to maintain their conditions and save energy consumption. Moreover, Maejo University has continuously proceeded for installing motion sensors in all the toilets in Maejo University to control the appliances in the toilet whether the persons are using the toilet or the persons are not. Scope 3: - Waste Making organic Fertilizer from organic wastes is a project that Maejo University has been proceeding with in recent years reducing the incineration of organic waste. The waste is composed of natural fertilizer by natural composition applied to the vegetable garden and crop field in the university.



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

As noted in the memorandum of understanding (MOU) between Maejo University and the San Sai District Office, the project for the development of community economy and strengthening by systematic community integration base on area-based collaborative approach, San Sai District (San Sai Model) has organized.

Also, the University has collaborated with the Ministry of Higher Education, Science, Research and Innovation to carry out the employment program for the affected people from the situation of the Coronavirus Disease 2019 (COVID-19), which 4 people were employed for phase 1 of the program.

10 Models for City Development
455 people employed during COVID-19
3 Projects

The project for development of community economy and strengthening by systematic community integration base on area based collaborative approach, San Sai District, Chiang Mai Province

As noted in the memorandum of understanding (MOU) between Maejo University and the San Sai District Office on 21 June 2019 – 30 September 2021, the School of Administrative Studies of Maejo University has organized the project for the development of community economy and strengthening by systematic community integration base on area-based collaborative approach, San Sai District (San Sai Model) in the fiscal year 2019.

The development of the capacity of local community leaders in the management of economic, social and quality of life development in San Sai District using the Sufficiency Economy Philosophy and Sustainable Development

Employment projects for people who were affected by the coronavirus disease outbreak (COVID-19)

This project aimed to hire people who were unemployed from the impact of the Coronavirus Disease 2019 (COVID-19) situation. Maejo University has collaborated with the Ministry of Higher Education, Science, Research and Innovation to carry out the employment program for the affected people from the situation of the Coronavirus Disease 2019 (COVID-19), which 455 people were employed for phase 1 and phase 2 of the program.

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Maejo University has involved in several activities to build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.

Reskill/Upskill Project

Diploma course (Non-Degree) Course name Commercial Agricultural Product Value-Adding Innovation, responsible for which is the Center of Excellence in Agricultural Innovation for Entrepreneurs. Course goals are:

1. Learners have ideas and processes to create innovation. It can be applied to create the value of commercial agricultural products concrete.
2. Learners can add value to agricultural products as food products. And at least one non-food product, such as herbal extracts, cosmetics and packaging materials, etc.
3. Learners can learn marketing strategies that are suitable for innovative products and meet the needs of consumers.

Target Groups:

1. Self-employed people affected by the Covid-19 situation.
2. Those interested in developing innovative products from agricultural products for commercial distribution. Number of trainees per class, there are 30 participants per class, organized in 1 class, totaling 30 people..

Technology Transfer on Bluey Crab Abdomen Culture for Releasing Them into the Sea (Phase 2)

The project was funded by the National Research Fund. The research team comprised Yutthana Sawang-Arom, Kamonwan Supawinyu, Boonsilpa Jittaprapan, Nichapon Buathong, and Siwapong Klaisombat. This research aimed to facilitate activities promoting and supporting the research project.

1 Non-Degree
6,055 Participants in Developing Labour Skills Courses
2 Projects

10 REDUCED INEQUALITIES

Maejo University has run many projects to support people in diversity.

Most of our projects have fulfilled local and regional needs.

74 Career Development Units
Holistic Area Based Development
4 Projects

Holistic Community Development

Maejo University and Betagro Company worked in cooperation to improve the quality of life in the community by using the knowledge that the university and the company had. Diversity in a community context and strong municipalities can be driven using knowledge at companies and universities with the aim of creating impact and sustainability in the community by using the holistic area base development

10 REDUCED INEQUALITIES

Table 2 The effects of organic feed on feed cost and income (n=4, Mean ± SEM)

Items	Group				
	Commercial	Control	Organic1	Organic2	P-value
Feed cost (USD/bird)	1.32±0.05^{b}	1.18±0.005^{b}	1.74±0.09^{a}	1.83±0.14^{a}	0.001
Feed cost (USD/Kg BWG)	0.59±0.01^{b}	0.73±0.05^{b}	1.53±0.12^{a}	1.59±0.08^{a}	0.000
Cost of feed and strain (USD/bird)	1.69±0.05^{b}	1.54±0.05^{b}	2.11±0.08^{a}	2.19±0.14^{a}	0.001
Income over feed cost (USD/Kg BWG)*	0.79±0.01^{b}	0.65±0.05^{b}	2.61±0.13^{a}	2.94±0.24^{a}	0.000
Income over feed cost and strain (USD/bird)*	0.43±0.01^{b}	0.29±0.05^{b}	2.25±0.13^{a}	2.57±0.24^{a}	0.000

BWG; body weight gain

^{a,b} in the same row show statistically differences (P<0.05)

The using of organic feed in broiler production

The effects of organic feed ingredients on production performance and carcass characteristics and price and income for organic chickens were studied in male broilers, and compared with those of a conventional production system. Newly hatched male broiler chicks were divided into four groups with four replicates of 12 birds each: (1) birds fed a commercial diet (commercial); (2) birds reared with our own made diet consisting of nonorganic conventional feed ingredients (control); (3) birds fed 95 percent organic diet consisting of organic corn and full-fat soybean meal (organic 1); and (4) of organic broken brown rice in addition to the organic 1 group (organic 2). At 42-d of age, the weight of carcass, each meat part, and visceral organs was measured. Compared with the commercial group, the organic groups decreased feed intake, body weight gain, feed efficiency, and carcass yield ($P < 0.05$) increased visceral organs ($P < 0.05$) (Table 1) but costs and income for chicken increased ($P < 0.05$) (Table 2). These results suggest that the present organic feed design seems to be a good model for organic broiler production and contributes to farmer profits.

Energy efficient appliances usage are replacing conventional

One of Maejo University's essential action is to reduce the energy usage by implementing the plan of encouraging to replace conventional appliances with high-efficiency appliances. Recently, the university has been granted a budget from the Ministry of Energy to replace former air-conditioners and lighting system with Inverter air-conditioners and LEDs. To align with Term of Reference (TOR) of Department of Alternative Energy Development and Efficiency, about half of fluorescents light bulbs (18W – 36W) at the university have been changed to LEDs (9W – 18W) and several conventional air-conditioners have been changed to Inverter air – conditioners. Table 2.1 demonstrates the number and percentage of energy efficient appliances compared with all appliances in the campus. The sum of percentage of energy efficient appliances compared with all appliances in the campus is around 64 %. Appendix 1 illustrates the Term of Reference (TOR) of Department of Alternative Energy Development and Efficiency changing the appliances.

Academic Support, Follow-Up, and Lesson Learning from an Experimental System of Labor Skill Development in Needy and Disadvantaged Communities Based on Funding from the Equitable Education Fund Project

The School of Administrative Studies under the leading of Dr. Somkid Kaewthip has implemented a project entitled, “Academic Support, Follow-Up, and Lesson Learning from an Experimental System of Labor Skill Development in Needy and Disadvantaged Communities Based on Funding from the Equitable Education Fund” in the fiscal years of 2019 and 2020. Currently, in Thai society, the working-age population often suffers from unemployment due to the economic downturn causing these groups of workers to be laid off and move back to their homeland a lot. In addition, workers who are still employed in workplaces are considered as unskilled or low skilled workers due to a lack of skill development to be consistent with and link the economy, community, and labor market. Besides, there was a problem of educational disparity, resulting in the working-age population with Lower Secondary Education qualifications or lower have lower incomes than those with a degree or higher. As a result, there are many disparities in various areas such as income inequality, employment, and professional skill development. The objectives of this project are 1) to reinforce, design, and create a participatory learning process for the professional development unit, 2) to support and develop mechanisms for driving the career development unit to have the potential for learning management, 3) to manage knowledge in labor skill development of the development unit career, 4) to create a network of professional development units to drive collaborative learning, and 5) to synthesize lessons and develop policy recommendations for the development of labor skills for occupational development units and labor groups who are poor and disadvantaged. The project has been undertaken cooperatively with the various networks nationwide in recruiting participants through EEF (Equitable Education Fund). At present, there are many related projects under the care of Maejo University from every region. There are 74 career development units covering 5 regions, namely the North, the Central, the West, the North-East, and the South, including 42 provinces nationwide. The participants receive funding to return to their homeland for creating job opportunities and building communities by helping the needy and disadvantaged. They are expected to develop skills, knowledge, and ability to work according to their aptitude and the potential to be self-reliant ultimately. In addition, they are hoped to be able to survive, coexist, and live meaningfully in their community and society through the development of life skills in household economics, management skills for the 21st century, career networking, occupational and entrepreneurial skills, career skills along the path, community-based career advancement, etc. The project has a mechanism to follow-up and to provide support from mentors from all four regions right from the upstream, midstream, and downstream processes to make the career development units achieve successful implementation of the project, and to achieve the goals of EEF.

There were 6,055 needy and disadvantaged persons participating in the project and they could be divided into 2,175 system workers, 1,236 unemployed, 601 elderly persons, 622 imprisoners, 254 disabled persons, 284 state welfare cardholders, and 883 persons in other categories (like youth parents/youths/housewives/community enterprises). It was found that the project could develop occupations for the persons in the shortage and disadvantaged groups in 6 independent careers, namely: agriculture, processing, handicrafts and crafts, handicraft, entrepreneurs, and hospitality and tourism. As a result, it was found that there were significant impacts on the target groups and local communities. There were career development curricula that matched the target group's needs, there were products developed from resources available in local communities, community economic development, products derived from local wisdom by combining 21st-century knowledge for product design. The packaging was unique and created a reputation for each area in every region of Thailand. The project created entrepreneurial career development established a network of entrepreneurs, created platforms, marketing, and target products. It could make the participants reduce their expenses, increase income, able to support themselves and their families, and their life valuable and happy. Moreover, the project could stem out outstanding career development units all over the country to extend the main project under the 2020 community-based innovation and career development funds. At present, there were 19 projects, covering 4 regions for such a main purpose and they had been evaluated and monitored by mentors and experts in various fields from 4 sectors (government/academia, private, mass media, and community expert sectors). The project had been considered and approved for funding for 2020. To sum up, the project can be considered as an extension of the operations to enhance the development of professional skills, to expand the area and scope of work of the professional development units, to create jobs, create careers, strengthen the community economy, to reduce disparity, and to enhance the quality of life of the people in the community to be happy based on community-based career development. For more information, you can follow the development of the project at https://www.facebook.com/community.base.eef

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

During 2020, Maejo University delivered four projects in relation to SDG 11 with 1,378 participants. Also, we created 80 newly tree doctors, assisted farmers having a limited piece of land and provided water resource for agricultural purposes.

1,378 Visitors
22,295 baht ($736.10 USD) increasing income
4 Projects

A Short Term Training Program on Ideal Sustainable Community by Applying Sufficiency Economy Philosophy

Photos are distinguished guests from the Socialist Republic of Vietnam at Chiang Mai International Airport. The guests are participating in a Short Term Training Program on Ideal Sustainable Community by Applying Sufficiency Economy Philosophy. A program conducted by Maejo University and supported by the Ministry of Foreign Affairs, Thailand International Cooperation Agency (TICA).

Tree Doctor for Communities Project

Tree Doctor for Communities Project was dealing with the management and restoration of large trees in San Sai District, Chiang Mai Province when Maejo University was 85 years old, and the management and restoration of big trees on December 11, 2018. The objectives of the 2 events were 1) to respond to green university policy-driven and eco-urban communities, 2) to develop human resources to understand the concepts and best practices in "management and restoration of big trees", 3) to conserve and maintain large trees with physical and mental values in urban areas and sustainable environmental development target areas, 4) to create a landscape image and atmosphere in harmony with the concept of community innovation with the historical stories of the big tree of the communities, 5) to carry on the concept and cultural wisdom in the conservation of big trees, and 6) to give opportunities for all sectors to take part in the conservation and maintenance of large trees with physical and mental values. There were 80 participants from the general public, private company employees, Yangna (Dipterocarpus alatus) Volunteer Group, and a special children group from Kawila-Nukul School. Its project location is Maejo University in Chiang Mai Province and its operating cost was 30,000 baht.

The New Theory Agriculture Perpetuation in Accordance with the Royal Initiatives Project

King Bhumibol Adulyadej, Rama IV delivered his royal address about guidelines for the New Theory Agriculture practice to Maejo University graduates in 1995. This led to the practice for assisting farmers having a limited piece of land and providing a water resource for agricultural purposes. In this respect, there were three steps which aimed to strengthening foundation. This would eventually lead to the success in poverty alleviation which resulted in a better quality of life, strong community and self-reliance. Maejo University set up a New Theory Agriculture learning base in 1996 which aimed to be a learning source for students and interested persons. Nowadays, the New Theory Agriculture is located in Maejo University and it covers an area of 15 rai (5.93 acres). However, its operation is not completed in accordance with correct principles. Hence, it needs to be developed under New Theory Agriculture guidelines to meet the goal as the center for learning, teaching, and research conducting. The preparation of New Theory Agriculture demonstration plot consists of 9 activities: 1) rice growing, 2) fruit tree growing, 3) vegetable growing, 4) herbal plant growing; 5) caged fish culture, 6) pig rearing, 7) compost and bio-liquid fertilizer production, 8) native chicken rearing, and 9) banana varieties collection and conservation plots. In fiscal year 2020, the New Theory Agriculture demonstration plot can earn an income from its yields for 22,295 baht ($736.10 USD). In the same year there are 1,378 visitors who are students, farmers, and interested persons.

Lanna Agricultural Culture Learning Center

The Lanna Agricultural Culture Learning Center covers an area of 35 rai (13.84 acres). This area is prepared for the demonstration on Lanna agriculture, lifestyle simulation of farmers in the past, and local agriculture wisdoms. It can be used for activities of the leaning center for students, farmers, and interested persons. Importantly, it is a learning center in the community which truly can support itself by means of Lanna agriculture ways. Besides, it is a sustainable agriculture system which farmers can be self-reliant. The operational activities of the past fiscal year 2020 attracted 98 people and 872 students to visit the learning center. This included the following activities: 1) lecture, training, demonstration and exhibition; 2) support on teaching, learning facilitation on the Agriculture for Life course for first year students; 3) care-taking of domesticated animals and organic animal rearing farmhouse; 4) landscape improvement of the learning center; and 5) rice growing and organic vegetable demonstration plot. In addition, the learning center could earn an income from pig selling for 30,000 baht ($990.52 USD). The past operation also involved the lecture about Lanna Agricultural Learning Center, natural farming, and action training course on “Natural farming in accordance with sufficiency economy guidelines’, rice growing demonstration, Lanna farming tools and organic animal care-taking.

Ensure sustainable consumption and production patterns

Maejo university has announced Green University and Green Office Policies, and one of the focus is on ethical sourcing of food and supplies. Projects that follow this policy such as Organic Animal Feed and Livestock Project. The University also has a waste management policy to reduce the amount of waste, sorting waste and hazardous waste according to the principles of 3Rs such as reduce, reuse and recycle. The university manages and develops systems that support waste reduction, waste separation and hazardous waste management from the source to the waste treatment system.

418 kg./day of inorganic waste recycled
220 ton organic feed produced
12 Projects

Smart Farming

Smart Farming is a training workshop developed by Faculty of Fisheries Technology and Aquatic Resources, Maejo University. The aim of the workshop is to provide the students, entrepreneurs, and aquaculture farmers some guidelines to improve productivity of the aquaculture. The Faculty staff who initiates the workshop hopes that students and aquaculture farmers will see that there is a professional development in aquaculture, and they can be self-sufficient. Smart farming can also develop a stable and sustainable aquaculture industry for them. The details of the performance are as follows: 1. Construction of an intelligent aquaculture house. Twenty-two plastic ponds 7.00 * 36.00 meters in size were built, and each pond can store 3-ton of water. This aquaculture house has an intelligent control system Aquaculture (complete) with 9 units or 9 types. It is situated at Faculty of Fisheries Technology and Aquatic Resources, Maejo University, Chiang Mai. 2. The training workshop and technology transfer on smart aquaculture were held two times for 117 participants. The first training workshop and technology transfer on smart aquaculture was at Faculty of Fisheries Technology and Aquatic Resources, Maejo University, and the participants were Maejo University students. The second training workshop and technology transfer on smart aquaculture was for the entrepreneurs, and aquaculture farmers.

Organic Animal Feed and Livestock Project

Organic Animal Feed and Livestock Project has formed a network of farmers, and producers of organic feed ingredients. There are farmers who produce organic feed ingredients from 225 networks in Chiang Mai and nearby provinces. The training project producing organic feed ingredients was first implemented at Muangngai Municipality and it was later implemented at Bann Bua community. The training project was also implemented at Boonboon farm which is a goat milk farm in Lampang province. The project produced two kinds of organic feed ingredients for sale: ground organic corn and full fat organic soybeans (Organic Soybean Extract) of 220 tons. The quality of the organic feed produced met the criteria, no toxic substances, and no spoilage. The project has established a prototype factory to produce organic animal feed as a source of knowledge transfer in organic animal feed production. This prototype factory also showed how to raise organic animals that were suitable to local conditions. The lecturer gave advice on raw materials for producing organic animal feed. The target group was farmers who produced organic feed ingredients, farmers interested in producing raw materials and organic animal feed, students, academics and researchers, and interested people. The researcher brought the acquired knowledge to integrate with research on animal feed management which emphasizes methods for managing raw feed raw materials in an organic system, and research on organic feed production. The research is still under a process and it is a cooperation between researcher in the project with a network of farmers who produce organic feed ingredients and a network of organic herders in Chiang Mai and nearby provinces.

Promoting biogas production from organic waste at the household and community level

From surveying areas around Maejo University at Pa Phai Subdistrict Administrative Organization, San Sai District, Chiang Mai Province. It was found that villagers were aware of the importance of waste separation. This Subdistrict is a large community with an area of 21,301 rai, and currently has a population of approximately 12,706 people. The solid waste problem is a major problem for the community, so Pa Phai Subdistrict Administrative Organization set a campaign for villagers to sort waste from the household level to reduce the amount of waste and also to increase the convenience of staff storage. There is also a policy to convert organic waste sorted from households into biogas and bio-compost for agricultural use. There was a need for biogas technology transfer to find ways to manage such organic waste properly. Thus, School of Renewable Energy, Maejo university has started to disseminate knowledge on biogas production from organic waste at the household and community levels by transferring technology that is easy to use and easy to maintain. The technology is also inexpensive and it can efficiently reduce organic waste. In order to do so, prototypes must be built and the results from use of technology in the community must be evident so that it can be a good example for other communities in every province of Thailand. Those who took part in the training program could get 138 kg of LPG biogas per month, saving LPG cost 1,800 baht per month.

The training project to expand the results of the promotion of biogas production from organic waste at the household and community level to create a model district for the use of renewable energy

This project is an academic service to the community around Maejo University operated by the School of Renewable Energy in collaboration with the Pa Phai Municipality and Mae Faek Sub-district Municipality, San Sai District and community Leaders of 12 communities, including seven villages in Pa Phai Subdistrict and five villages in Mae Faek Subdistrict. The project aims to

(1) transfer the knowledge in biogas production to the community to promote the reduction of solid waste problems in the community using biogas technology.

(2) to create a prototype for efficient and sustainable use of the biogas system from organic waste in the community. The project included five activities as follows;

Activity 1: Contact and coordinate public relations with communities or villages in the area of San Sai District. Twelve communities were selected and participated in the project. A questionnaire was developed to evaluate the villagers' basic knowledge before attending the training on biogas system technology and waste management. It was found that villagers have basic knowledge of waste classification, but they still used traditional waste disposal methods such as landfill and incineration.

Activity 2: Create training materials. The lecturer prepared documents, training manuals, posters, videos, learning materials. A questionnaire was also developed to assess the participants' understanding and their satisfaction toward the training program. A demonstration kit for the production system was also built.

Activity 3 Organize a workshop to transfer knowledge on cultivation of soilless vegetables to the target group. After the training, the participants had more knowledge and were able to answer questions. According to the results of the questionnaire, the participants were satisfied and very satisfied with the training workshop.

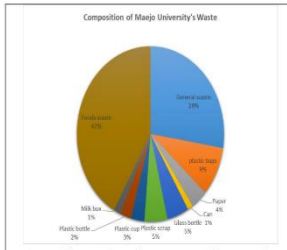
Activity 4 Follow up on the results of the biogas production project Activity 5 Analysis of the achievement of the participants. The villagers had more understanding of biogas and waste management after the training as seen from the posttest. The participants were 98% satisfied with the training, 100% completed the training.

Manure Production Project

Faculty of Animal Sciences has produced fertilizer from animal manure. The animal manure and residues from each farm were dried and mashed thoroughly, packed, and sold to the community. The project generates income for students from the sale of manure and residues from livestock farms. The project responds to the policy of Smart farm, Green University, and Eco University of the university. It is estimated to sell the fertilizer around 1,000 sacks.

Proportion of recycled waste

Waste management and treatment process in Maejo university were developed. The main scope of the project was to improve the recycle process of inorganic waste in order to recover valuable materials such as precious metals papers and rare earth elements. To achieve this, firstly waste sorting and separation programs were continually conducted and promoted to all faculty and students. This has the aim to raise all users' awareness on inorganic waste collection. Thus, about 418 kg./day of inorganic waste was recycled.



More than 30% of waste can be recycle

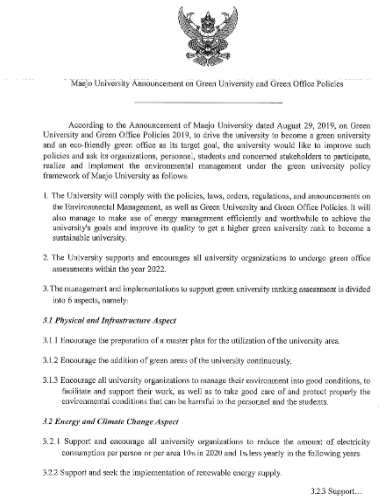
Donation point of milk box, Aluminum loop and Stockings for recycle

A training project on holistic health management and aquaculture to reduce production costs and reduce economic damage

The Faculty of Fisheries Technology and Aquatic Resources has organized a training program on holistic health management and aquaculture to reduce production costs and reduce economic damage. The name of the training course is "Holistic Freshwater Health Management and Aquaculture in order to reduce production costs and reduce economic damage". The first training project was organized on 18 July 2020, with 28 participants, and the second training was organized on August with participants. Both training projects took place at Inland Aquaculture Research and Development Chiang Mai. Thus, there were altogether 49 participants. The goal of this training project was to provide farmers, students, alumni, those involved in aquaculture, and those who were interested some knowledge in aquaculture health management and environmentally friendly aquaculture. Those attended the training project were expected to modify their farming methods to reduce the use of drugs and chemicals. This will generate productivity at such a level that farmers can earn more income from fish farming or for household consumption. This project is in line with promoting the people to live in a self-sufficiency economy. When fish farmers attended the project have accurate knowledge of safe fish production, they can increase their productivity. (https://erp.mju.ac.th/projectAssessFrm.aspx?goID=27&pid=15754)

Operational measures

According to the university's policy towards green university and green office that is environment friendly, creating a pleasant society in the university community and being a good example for the community and surrounding society are necessary to achieve this goal. In support to the Green University and the Green Office, the University allows departments, personnel, students, and relevant parties to participate and manage under the policy of the Green University



Maejo University Announcement on Green University and Green Office Policies

According to the Announcement of Maejo University dated August 29, 2019, on Green University and Green Office Policies 2019, to drive the university to become a green university and an eco-friendly green office as its target goal, the university would like to improve such policies and ask its organizations, personnel, students and concerned stakeholders to participate, realize and implement the environmental management under the green university policy framework of Maejo University as follows:

1. The University will comply with the policies, laws, orders, regulations, and announcements on the Environmental Management, as well as Green University and Green Office Policies. It will also manage to make use of energy management efficiently and worthwhile to achieve the university's goals and improve its quality to get a higher green university rank to become a sustainable university.
2. The University supports and encourages all university organizations to undergo green office assessments within the year 2022.
3. The management and implementations to support green university ranking assessment is divided into 6 aspects, namely:

3.1 Physical and Infrastructure Aspect

3.1.1 Encourage the preparation of a master plan for the utilization of the university area.

3.1.2 Encourage the addition of green areas of the university continuously.

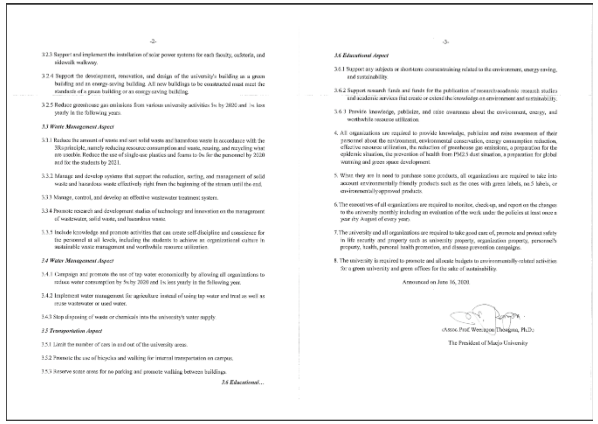
3.1.3 Encourage all university organizations to manage their environment into good conditions, to facilitate and support their work, as well as to take good care of and protect properly the environmental conditions that can be harmful to the personnel and the students.

3.2 Energy and Climate Change Aspect

3.2.1 Support and encourage all university organizations to reduce the amount of electricity consumption per person or per area 10% in 2020 and 1% less yearly in the following years.

3.2.2 Support and seek the implementation of renewable energy supply.

3.2.3 Support...



3.6 Educational Aspect

3.6.1 Support any subjects or illustrators courses/training related to the environment, energy-saving, and sustainability.

3.6.2 Support research funds and funds for the publication of research/academic research studies and academic services that create or extend the knowledge on environment and sustainability.

3.6.3 Provide knowledge, publicize, and raise awareness about the environment, energy, and worthwhile resource utilization.

4. All organizations are required to provide knowledge, publicize and raise awareness of their personnel about the environment, environmental conservation, energy consumption reduction, effective resources utilization, the reduction of greenhouse gas emissions, a preparation for the epidemic situation, the prevention of health from PM2.5 dust situation, a preparation for global warming and green space development.

5. When they are in need to purchase some products, all organizations are required to take into account environmentally friendly products such as the ones with green labels, no.5 labels, or environmentally-approved products.

6. The executives of all organizations are required to monitor, check-up, and report on the changes to the university monthly including an evaluation of the work under the policies at least once a year (by August of every year).

7. The university and all organizations are required to take good care of, promote and protect safety in life security and property such as university property, organization property, personnel's property, health, personal health promotion, and disease prevention campaigns.

8. The university is required to promote and allocate budgets to environmentally-related activities for a green university and green offices for the sake of sustainability.

Announced on June 16, 2020.

(Assoc. Prof. Wanchai Theajjang, Ph.D.)

The President of Maejo University

Using Thai herbs and herbal extracts to replace antibiotics for safe aquaculture production.

This project focuses on cultivating ideas, knowledge, and understanding about the use of Thai herbal extracts for future farmers. The project was conducted at Lamphun College of Agricultural and Technology with 73 participants, and Chiang Rai College of Agricultural and Technology with 71 participants. In this project, Assist. Prof. Dr. Jiraporn Rojtinnakorn was a lecturer for workshop which aimed to educate about the use of antibiotics, chemicals, including herbal extracts for safe aquaculture ,and to cultivate attitude and enhance knowledge in regard to the use of Thai herbs and herbal extracts in aquaculture for the safe production of aquaculture by using non-residue herbal extracts. It does not have any impact on farmers, or consumers, and it is also a practice for sufficiency agriculture by using local and environmentally friendly resources.(https://erp.mju.ac.th/projetDetail.aspx?goID=27&pid=15764)

Raise the economic return of farmers in the meat supply chain according to the northern ecological landscape

The research area was in Lampang, Nan, Chiangrai, and Prae Provinces. The results of the research project are as followed 1. If there is a farmers union to help management, it would create a more circular economy. 2. Management of Technology/ Innovation 2.1 The use of breeding technology and innovation helps increase productivity of upstream cattle efficiently and it causes dependence on calves from the area. 2.2 Regarding food handling technology, farmers have already had knowledge about food technology management and innovation, but there should be a key person who can provide some information that causes the integration of knowledge and resources to reduce food costs and significantly reduce food imports from outside the area.

Egg quality improvement by using Spirulina platensis

The researcher used Spirulina platensis in comparison with commercial feed to see if there were any differences in egg quality improvement. The research was conducted in laying hens. The laying hens were randomly assigned to 4 experimental groups (Completely Randomized Design; CRD), 4 replicates of 25 laying hens. Group 1, the chickens were fed control diet without Spirulina platensis (0%). Group 2 and 3 the chickens were fed the control diet in which the 0.10 and 0.15% Spirulina platensis were added respectively. Group 4, the chickens were fed commercial feed. The egg production performance and egg quality were observed for 12 weeks. The overall results of the 1-12 weeks showed that of the experimental the Spirulina platensis were not affected on feed intake and egg production ($P > 0.05$) (Table 1 and 2) but the feed efficiency of Spirulina platensis groups were lower than those of control and commercial feed groups ($P < 0.05$). The egg weight, yolk index, shell thickness, Hough unit, shell color and shell strength were not different ($P > 0.05$). The yolk color of Spirulina platensis groups was higher than that of control ($P < 0.05$) but yolk color of commercial feed was highest ($P < 0.05$). Therefore, Spirulina platensis improved egg yolk color when compare with safety control feed, should be use in safety egg production. The commercial feed resulted in high score egg color according to it used the synthesis color as feed additive. Furthermore, the nutritive value should be compared.

Table 4 Effects of experimental diets and commercial feed on egg quality (2-12 weeks)

Week	Spirulina platensis (%)			Commercial feed	SEM	*P-value*
	0.00	0.10	0.15			
Egg weight (g)	61.87	62.44	61.97	63.45	0.35	0.39
Yolk index	0.43	0.43	0.43	0.44	<0.01	0.61
Shell thickness (mm)	0.35	0.36	0.36	0.37	<0.01	0.23
Hough unit	97.83	98.09	98.62	98.81	0.16	<0.01
Shell color (%light)	23.57	23.66	24.15	23.66	0.20	0.76
Shell strength (kg/cm^2)	4.51	4.53	4.46	4.54	0.03	0.80
Yolk color	8.17^c	8.50^b	8.66^b	10.84^a	0.27	<0.01

$^{a-c}$ in the same row show statistically differences ($P<0.05$)

Take urgent action to combat climate change and its impacts

During the year 2019-2020, Maejo University carried out 4 projects considered as urgent actions to combat climate change. Participants were from local, regional and international networks.

2,100 participants from 170 countries

4 Projects

Maejo Fire Cat Team - Forest Fire Combatting

Chiang Mai Province suffered a forest fire problem in the dry season. During the year 2020, forest fires have had widespread effects, especially in the Doi Suthep-Pui area. From the above event, a group of lecturers and students called the “Maejo Fire Cat Team” gathered to combat the problem. The team has actively extinguished forest fires by several methods such as building forest firewalls/lines, donating and gathering necessary supplies including utilizing drones to track fires and report fire spots.

Project on the Enhancement of Renewable Energy using Understanding for Farmers and Students in Highland Areas of Upper Northern Thailand to Reduce Smog

The project proponents have an idea to promote and support youth development in terms of knowledge. This is done by preparing a project on the enhancement of understanding about renewable energy using for farmers and students in highland areas of upper northern Thailand in order to reduce smog. It is done through activities of the Young Energy Smart Farmer Digital Thailand 4.0. It aims to transfer the body of knowledge related to agriculture, energy, smog problem reduction, and energy-smart farm technology. This is beneficial to youth farmers and new-age farmers in the future. Based on its details, the following are the objectives of the project:

Cultural Exchange and Environmental Conservation Program for ASEAN Relationship

Assoc. Prof. Dr. Weerapon Thongma, President of Maejo University inaugurated Maejo University International College (MJU-IC) demonstration farm on September 12, 2020, at Maejo Unversity Farm. Assoc. Prof. Dr. Thongma also joins in the Cultural Exchange and Environmental Conservation Program for ASEAN Relationship with the aim of planting more trees within the forest. The occasion was attended by MJU-IC students, lecturers, staff, Associate Dean (Dr. Winitra Leelapattana) and Dean of MJU-IC (Assoc. Prof. Dr. Rapeephun Dangtungee) More info: https://mju-ic.mju.ac.th/wtms_newsDetail.aspx?nID=23163 https://www.facebook.com/MaejoUniversityInternationalCollege/posts/785226368960037

Regional Workshop: Scaling-up Agroecology in ASEAN Higher Education to Meet SDGs and Ensure Climate Resilience at Maejo University, Chiang Mai, Thailand

CONTEXT. With support from the Office of the Higher Education Commission (OHEC) Thailand, Maejo University led a small multi-disciplinary policy study and dialogue project on "Scaling-up Agroecology in ASEAN Higher Education to Meet SDGs and Ensure Climate Resilience at Maejo University, Chiang Mai, Thailand" contributing to the ASEAN Work Plan on Education (AWPE), 2016-2020 while Thailand was Chair of the Association of Southeast Asian Nations (ASEAN) in 2019 under the theme: "Advancing Partnership for Sustainability." RATIONALE. Modern, "conventional," mono-crop intensive, industrial agriculture and agri-business is one of the world's greatest contributors to environmental damage, including agrochemical pollution, desertification, deforestation, drought, depleting aquifers, biodiversity loss, land degradation, and maybe the world's greatest contributor to climate change. Moreover, this dominant agriculture development model and agri-food system have not served many small-holder farmers, poor families, and rural communities well. In Southeast Asia, around 63 million people (close to 10 percent of the population) are undernourished or food insecure, with farmers and poor rural communities most vulnerable or hungry. Essentially the world needs a paradigm shift …the need for a two-track approach that drastically reduces the impact of conventional agriculture, on the one hand, and broadens…agro-ecological production methods on the other…" (UNCTAD, 2013).. CONCEPT. Agroecology (AE) has at least three core dimensions: science, movement, and practice (Wezel, et. al. 2009). AE "is the development and application of ecological theory to the management of agricultural systems" including "the influence of social, economic, and political factors on the structure and success of farming systems" (Altieri and Francis, 1992). Related practices include Agroforestry (AF), Organic Agriculture (OA), Conservation Agriculture (CA); Integrated Pest Management (IPM) or Integrated Crop Management (ICM) Sustainable Rice Intensification (SRI), "Farming with Nature" (FN) or ecological agriculture (EA). FAO defines AE as "an integrated approach that simultaneously applies ecological and social concepts and principles to the design and management of a sustainable and fair food system" (FAO, 2018). FAO held its first Multi-Stakeholder Consultation on Agroecology in Asia and the Pacific 24-26 Nov 2015 in Bangkok. This was part of a four-year process of political dialogue about the benefits of AE world-wide. FAO has facilitated global and regional dialogue on AE through 9 regional and international multi-stakeholder meetings, bringing together more than 2,100 participants from 170 countries. These meetings helped identify needs and priorities to scale up AE as a strategic approach to achieve Zero Hunger and the SDGs.

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

Maejo University has two institutes, the Faculty of Fisheries Technology and Water Resources, and Maejo-Chumphon Campus, carrying out projects to conserve and sustainably use the oceans, seas and marine resources for sustainable development.

2 Major Institutions for Life Below Water Projects
1,000+ participants
3 Projects

Using Local Wisdom for the Conservation of Coastal Biological Resources by Maejo University at Chumphon Campus

The objectives of this research were to respond to the royal initiatives under the Plant Genetic Conservation Project under the Royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn Siam Boromrajakumari and to investigate the body of knowledge and create a database of local wisdom for the conservation of coastal biological resources by Maejo University at Chumphon Campus. It was found that Lamae District was a small agricultural community that the majority of its population were agriculturalists working in gardening and farming such as rubber tree planting, oil palm planting, and fishing along the sea. Their local wisdom for the conservation of coastal biological resources arose from the knowledge that had been passed down from one generation to the next in the conservation of the resources that they used for their professional life. Their local wisdom was especially stemmed from their consciousness to contribute to the conservation of larger marine resources, such as aquaculture of octopus eggs, the establishment of the Blue Crab Bank, etc. These could be regarded as a means to make coastal resource management better. Besides, the local dwellers constructed tools for occupation from the natural materials and modified them to suit the most for catching aquatic animals. For example, they used shellfish for catching squids, and bamboos to make coops in a unique way called “Green Pigeons’ Pattern” for catching fish. As for the conservation of the original way of life, there was a reconstitution of the local wisdom on the making of ancient sailing boats to allow the new generations to get acquainted with the methods. It is suggested that the government sectors promote, educate, and support the local dwellers in organizing resource conservation activities.

Technology Transfer on Bluey Crab Abdomen Culture for Releasing Them into the Sea (Phase 2)

The project was funded by the National Research Fund. The research team comprised Yutthana Sawang-Arom, Kamonwan Supawinyu, Boonsilpa Jittaprapan, Nichapon Buathong, and Siwapong Klaisombat. This research aimed to facilitate activities promoting and supporting the research project. Activity 1- construction of continuity to the learning center/ 11 Bluey Crab bank (Phase 1). Activity 2- activities on the establishment of the learning and the Bluey Crab bank as well as the technology transfer on the Bluey crab abdomen culture (Phase 2). The 12 Bluey Crab Bank Learning Centers covered two provinces, Chumporn and Surat Thani provinces. The technology transfer activities were held with 22 batches, 30 persons each.

Maejo University, the Department of Fisheries, and the Department of Marine and Coastal Resources Co-sponsor Research Studies, Academic Services, and Human Resource Development

Maejo University, the Department of Fisheries, and the Department of Marine and Coastal Resources co-sponsor research studies, academic services, and human resource development Maejo University, the Department of Fisheries, and the Department of Marine and Coastal Resources co-sponsor research studies, academic services, and human resource development On Wednesday, October 28, 2020, the Faculty of Fisheries Technology and Water Resources of Maejo University held a signing ceremony for human resource development and academic cooperation with the Department of Fisheries, Ministry of Agriculture and Cooperatives, and the Department of Marine and Coastal Resources, Ministry of Natural Resources and Environment. Associate Professor Dr. Weeraphon Thongma, the President of Maejo University, Mr. Meesak Phakdi-Kong, Director-General of the Department of Fisheries, and Mr. Sophon Thongdee, Director-General of the Department of Marine and Coastal Resources were the representatives of each organization to sign their names. The administrative and executive teams from the mentioned organizations are the witnesses of the ceremony that was held at Ruong Phueng Meeting Room, 5th Floor in the University Office Building at Maejo University. The Faculty of Fisheries Technology and Water Resources of Maejo University is an educational organization that has taught at least for 37 years with expertise in fisheries and water resources. Currently, it offers two undergraduate programs: Bachelor of Science in Fisheries and Bachelor of Science in Fisheries Management Innovation. It also offers 2 graduate programs: Master of Science in Fisheries Technology and Aquatic Resources and Doctor of Philosophy in Fisheries Technology and Water Resources. The faculty has educated a lot of graduates to serve society and still perform this function very strongly.

More info: http://www.green.mju.ac.th/?p=5087&lang=en

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss

Maejo University focuses on projects aiming to protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss.

70.7 % Research
77.7 % Land-sensitive Waste Disposal
17 Projects

Explore drought area in Chiang Mai province

The project is in association with the Royal Thai Army, Third Army Region (Kawila Camp). We explored the drought area in Chiang Mai province. This is done by travel with a 4-seat aircraft, a 41-seat training aircraft or a B.P. 41 is a 4-seat training aircraft with a flight range of 700 km, height 16,500 feet. They can fly up to 4 hours. The project is under the supervision of Major General Jiradej Kamolphet (Deputy General of the Army Region 3). The main mission is to take aerial photographs, photographs by multi-wavelength cameras (RGN Red + Green + Near Infrared) and identify the plant (The normalized difference vegetation index: NDVI). The collected data were used to assess the abundance of plants in this case, forest areas, agricultural areas along the Ping River, which are directly related to drought. The data will be used as a database for water management for agriculture in the Chiang Mai area.

Ecotourism Project at the Royal Initiative Project of Baan Pong, Sansai National Forest Reserve, Chiang Mai Province, THAILAND

Baan Pong Forest is located in the Sansai National Forest Reserve with the total area of 1,455 acre. This project has objectives which are: 1. To enhance ecotourism at the royal initiative project of Baan Pong, Chiang Mai Province. 2. To develop the learning center for soil, water, and forest with the participation among the graduates, local youth guides, and community enterprises for the sustainable conservation of Chiang Mai Province. 3. To create a prototype of the conservation of community forests to become the lungs of Chiang Mai Province 4. To create social awareness of the communication in the new era (Social medias) ?Target groups of the project: Total of 5,000 people including students, farmers, communities, and community enterprises in Chiang Mai Province. Activity Details: Activity 1: Meeting / Training 1.1 Build understanding with farmers, community leaders, entrepreneurs, and enterprises with potential and readiness for the model of ecotourism (Total 100 people) 1.2 Train local youth guides (Total 200 people) Activity 2: Soil, Water, and Forest Learning Center - Fish collection in Huayjo Reservoir which is the prototype of complex aquaculture in the glass tank together with the aquaponic planting is a three (3) sets organic far. It is also the glass tank prototype for variety of aquariums of total amount of ten (10) species in ten (10) glass tanks. We also held the online exhibition to promote the learning center through our website. Activity 3: Community Tourism Route - 5,000 people participate in the survey for tourism route. Activity 4: Follow up and Evaluation (Socioeconomic base) with the report.

Kad Maejo 2477, the Agricultural Product Market Providing Safe Organic Products from Farmers to Maejo University's Community

Kad Maejo 2477 is a safe market for agricultural products directly from the manufacturer to the consumer. The market is divided the distribution zones as follows: 1. Organic product zone for vegetables, fruits, and meat from research work of the university's faculties and offices, including students' products in the project "Vegetable Planting Project for Semester Fees of Maejo University". 2. The Kad community network zone, which is the product of farmers who have gained knowledge on organic production, safe agriculture from the university. 3. The Kad Mua zone for selling local food.

Sustainable Green Community Project

Sustainable Green Community Project: The project received 1,800,000 baht. The main objective is to improve the ecosystem in the nearby area of Maejo University. We have more than 500 participants who are MJU students, staff, and local residents in the nearby area. We have passed on the knowledge and awareness regarding ecosystem management through training and workshops. The issues in relation are reduction of PM 2.5 and larger air particles and organic waste treatment. The project implemented our on-going and future research. Adding to the results, the communities grow environmental concern, the ecosystem has been improved and sustainable development has been reinforced.

Waste Sorting from Yee Peng Festival, Chiang Mai

Our Student Union at Faculty of Fisheries Technology and Aquatic Resources, MJU Student Union, NG RIVER GUIDES led by Mr. Peerawat Kaotragoon and volunteers sorted garbage from Yee Peng Festival. We focused on the area that most wastes flooded into - Wang Tha Tarn, Ph Dad, Chiang Mai. Our students successfully sorted out toxic and non-disposal waste and passed it to the authorities for future proper management.

Green Energy and Organic Fertilizer from Agricultural and Food Waste

The project transforms agricultural and food waste into green energy and organic fertilizer. The examples of this waste are those from farming and harvesting and those of meat, leftover meals, fruits, vegetables, and manure. The process involved putting the waste into containers and after some period of time, we derive biogas. The gas can be used for cooking, lighting, and running machines. Particularly for household use, the gas is a good replacement for LPG gas in which its price is on the rise. This project has shown an effective way of getting rid of waste, at the same time, it provides an alternative environmentally friendly energy. We have delivered the knowledge through training and workshop for local communities. Participants can effectively transform waste and improve their farming with green energy and organic fertilizer. The project can help the farmers to save their budget on fertilizer. It further improves farmers' life quality to be chemical-free and to live a lifestyle on budget leading a gateway to sustainable development. (More info: https://erp.mju.ac.th/projectAssessFrm.aspx?goID=&pid=13318)

Green Energy from Corn Cob and Organic Substance from Organic Farming

Corn cob is an economic crop that can be transformed into different products depending on the species. Corn is a popular crop with more than 5,000,000 rais in the North of Thailand and about 170,000 rais in Chiang Mai. It grows well in the environment, easy to maintain, and prompts a short time before harvesting for about 3-4 months. However, the post-harvest process is problematic since farmers rely on the process of burning the cobs rather than turning the soil layer with machines. The burning causes air pollution and increases the greenhouse effect. To solve the problem, some farmers use the cops as fertilizer. Thus, we encourage them to transform the cop into a substance that can be used as alternative energy. We brought the cops into a transformation process with heat. It is transformed into the shape of a bar. It can be used for cooking and general household purpose. As a consequence, we can 1.) reduce the storage space of corn cops 2.) reduce air pollution of PM 2.5. 3.) reduce carbon dioxide and greenhouse effect 4.) offer an organic alternative to crop burning 5.) provide alternative energy for household use which is friendly to the environment 5.) the ash burned from the corn-cop bar is beneficial to soil quality and can be used as fertilizer. (More info: https://erp.mju.ac.th/projectAssessFrm.aspx?goID=&pid=13315)

Maejo Fire Cat Team - Forest Fire Combatting

Chiang Mai Province suffered a forest fire problem in the dry season. During the year 2020, forest fires have had widespread effects, especially in the Doi Suthep-Pui area. From the above event, a group of lecturers and students called the “Maejo Fire Cat Team” gathered to combat the problem. The team has actively extinguished forest fires by several methods such as building forest firewalls/lines, donating and gathering necessary supplies including utilizing drones to track fires and report fire spots.

Cheek Dam Project

On 25th July 2020, MJU Cultural Center held a special event to honor His Majesty Maha Vajiralongkorn on his 65th birthday. The event was combined with giving aims to the monks and environmental activities such as releasing about 1,010 fish into natural water resources and returning 1,010 orchid plants into natural habitats to improve the eco-system. We also built 2 cheek dams to improve the quality of water creatures and land. The improvement on the respected aspects has appeared in the nearby community in particular to Mueng Maejo Municipality, Ban Maejo community, Phak Kred community. Consequently, the improved water can go into bigger water resources of Mae Ping river; the major river of Chiang Mai. Afterward, each year, we have continued to maintain the dams’ quality in order to keep up its competence. This year on 8-19 June, the Center ran another project with an emphasis to maintain and fix cheek dams across Chiang Mai. The project is in support of Maejo University’s agricultural identity and environmental concern. We have fixed more than 500 dams which prevents soil degradation, water resource degradation, loss of balanced eco-system and water creatures. In a long term, this action sustains a quality water eco-system.

Discovery of a new species of batfish in the world

A new species of Batfish is discovered by our lecturer – Assoc. Prof. Dr. Apinun Suvarnarak from Faculty of Fisheries Technology and Water Resources. This is the first discovery in the world. The fish was discovered in the Mae Kui River Basin, Omkoi District in Chiang Mai. The species is named “Omkoi Bat Fish”. The scientific name is “Oreoglanis omkoiense Suvarnaraksha 2020”. The discovery was published in the Raffles Bulletin of Zoology, issue 68, pages 779-790, 2020. This genus of fish is found in low-temperature watersheds and in only strong, clear and clean water. The fish is an indicator of ecological integrity and is promising in regards of food security for people in the highland (More info: http://www.green.mju.ac.th/?p=5101&lang=en).

Ecotourism Project at the Royal Initiative Project of Baan Pong, Sansai National Forest Reserve, Chiang Mai Province, THAILAND

Baan Pong Forest is located in the Sansai National Forest Reserve with the total area of 1,455 acre. This project has objectives which are: 1. To enhance ecotourism at the royal initiative project of Baan Pong, Chiang Mai Province. 2. To develop the learning center for soil, water, and forest with the participation among the graduates, local youth guides, and community enterprises for the sustainable conservation of Chiang Mai Province. 3. To create a prototype of the conservation of community forests to become the lungs of Chiang Mai Province 4. To create social awareness of the communication in the new era (Social medias) ?Target groups of the project: Total of 5,000 people including students, farmers, communities, and community enterprises in Chiang Mai Province. Activity Details: Activity 1: Meeting / Training 1.1 Build understanding with farmers, community leaders, entrepreneurs, and enterprises with potential and readiness for the model of ecotourism (Total 100 people) 1.2 Train local youth guides (Total 200 people) Activity 2: Soil, Water, and Forest Learning Center - Fish collection in Huayjo Reservoir which is the prototype of complex aquaculture in the glass tank together with the aquaponic planting is a three (3) sets organic far. It is also the glass tank prototype for variety of aquariums of total amount of ten (10) species in ten (10) glass tanks. We also held the online exhibition to promote the learning center through our website. Activity 3: Community Tourism Route - 5,000 people participate in the survey for tourism route. Activity 4: Follow up and Evaluation (Socioeconomic base) with the report.

Maejo Local Wisdom Herbaceous Medical Plant Learning Center Project

Maejo Local Wisdom Herbaceous Medical Plant Learning Center Project is a plant genetic conservation project under the royal Initiative of Her Royal Highness Princess Maha Chakri Sirindhorn. We surveyed and collected available plant genetics resources. Moreover, we collected local knowledge and wisdom regarding local plant genetic resources including native herbaceous plant species. Then, we founded the Local Wisdom Herbaceous Medical Plant Center to promote the understanding regarding the local wisdom. The Center has shared the discovered knowledge for nearby communities and Northern areas of Thailand. We aim to offer the knowledge to meet any future requirements from outside sources.

Land sensitive waste disposal (Hazardous Waste)

Hazardous Waste Disposal and Management at Maejo University. MJU has generated a broad range of hazardous waste such as chemical contaminated waste, broken glass/sharps items, chemical containers, spray bottles, electronics devices, batteries, and fluorescence light bulbs. We set up a special budget and train our staff on waste collection and control. To efficiently manage and dispose of these items and promote environmental-friendly waste management, we run policies and several procedures as followed. We identify hazardous waste into 10 categories. Then, we promote waste management skills for our students and staff. Every year, we have a certified contracted company to collect and transport the waste for disposal. For example, in 2020, W.A. Logistics Co., Ltd. (the certified company) collected and transported 23,435 pieces of 36W fluorescence light bulbs and 3,063 pieces of 18W fluorescence light bulbs (100%). Trained lab-technicians who have certificates of waste management are responsible for chemicals contaminated waste, used chemicals, and chemical containers from laboratories and research sections. They handle and set up the procedures of collection and storage of this waste before disposal. These carefully proceed through steps of checking, weighing, labeling, and recording including pre-treating before storage. We make sure of placing and storing the waste in a safe environment before being disposed of by a certified contracted company each year. By far, we have successfully disposed of hazardous waste of 1775 kg (2017), 1274 kg (2018), 1826 kg (2019), and 2000 kg (2020).

In 2020, Maejo has agreed on a collaboration with AIS and ECOLIFE for the installation of E-waste bins on the campus. We have collected used and broken electronics devices including mobile phones and accessories and also IT items for disposal and management.

Hazardous waste (light bulbs/fluorescence light bulbs) collection and transportation for disposal

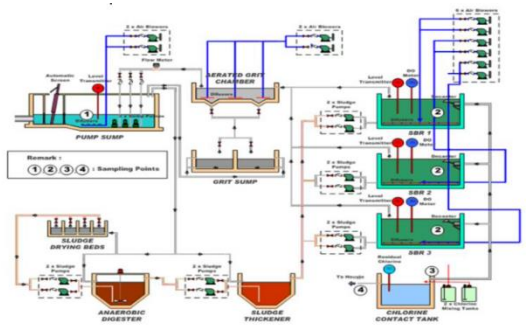
Hazardous waste bin

Hazardous waste collection points

Communication campaign for separation of hazardous waste from general waste and collection points

Land sensitive waste disposal (Greywater and Wastewater)

We collected sewage disposal system 100% of greywater and wastewater from all buildings in Maejo University campus using the separated sewer system. We, then, transported it through the piping system to treat at the MJU wastewater treatment plant. Also, we collected rain water from the roofs of the buildings and runoff before discharged it into local ponds and canals around university. For the wastewater treatment system, we used Sequencing Batch Reactors (SBR) to treat at approximately 1500 m3/d. All routine treatment parameters were analyzed by our technicians and confirmed results have been checked by the certified laboratory. High performance of WWTP are achieved with the treatment efficiency of more than 90%, which is safe to release to the environment. The results of wastewater analysis are reported as followed. The effluent from the treatment plant is further reused for landscape irrigation and agricultural purposes. Approximately 1000 m3 /d. of effluent was produced and more than 60% was collected in the pond nearby. This storage water has been used for landscape irrigation and horticulture crop during dry season in the campus. The remained 500 m3 of water has been used for grassy area through the PVC piping system. Sludge from the treatment plant was stabilized and dried before using as soil amendment for agricultural purpose. Moreover, the pilot model of ecological sanitation or ‘ecosan’ has been applied and installed at 7 main buildings, with the total amount of 303 toilets. These are in the main canteen, Sports’ Complex, 70th year study center, 80th year study center, the Faculty of Agriculture, swimming pool and Chootiwat Building. The project safely reused excreta for landscape management inside the campus. (More info: https://drive.google.com/file/d/0BxYJbR9BorLLRGVNZzdJX1FKZjRaUGVXZVRHQVZLTGNoMEkw/view?fbclid=I wAR3TXR1Ss9kvrdPJ60uLBADAOiW4jCmNKlrn1gUQ7lUSRFQNYIvDlzxpaqw)

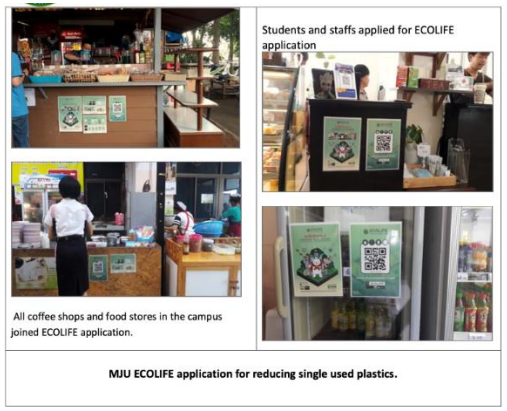


Land Sensitive Waste Disposal (Paper and Plastic)

Reduce the Use of Paper and Plastic in Campus on MJU campus: MJU promotes a reduction of paper and plastic usage through these policies.

1. MJU Zero Waste Project. We developed a mobile zero waste application and QR code provided for every shop at MJU canteen. Once students and staff refuse to get the plastic package, they get points which can be used as discounts for the drinks and food.
2. A mobile application called ECOLIFE aims to reduce single used plastics on campus. This application has been promoted and applied to every coffee shop and food store on campus. The project is implemented through a VDO presentation by K. Siripan Wattanajinda, the CEO of Ecolife. It introduces the ECOLIFE application for reducing single used plastics in everyday life.
3. In order to reduce the plastic waste, MJU has a project called “Say No to Plastic Bag Project”. Students and staff are encouraged to use reusable bags and containers for shopping at MJU organic market
4. We promote the idea of bringing your own containers for drinks and food. We encouraged shops to give discounts to customers when they do so. We also produced MJU useable cups for our students and staff.
5. To reduce the use of paper, we encouraged our students and staff to follow these different strategies such as replacing paper use with electronic documents, electronic meetings, printer sharing, printing documents on both sides, and using reused paper. We collected statics regarding the replacement and process.

(More info: https://greenrewards.mju.ac.th/MJUGreenRewardsService/help?fbclid=IwAR0bSLR9nawo2M_CZz8F5bfNLNtK_zRh_CPgy10Chu2uhwdZeAx0uH4WyDA)



MJU ECOLIFE application for reducing single used plastics.

Examples of “ Bring your own mug project”. Students and stuff can get the discounts from food and drink shops after bringing their own containers.

Land sensitive waste disposal (Greywater and Wastewater)

We collected sewage disposal system 100% of greywater and wastewater from all buildings in Maejo University campus using the separated sewer system. We, then, transported it through the piping system to treat at the MJU wastewater treatment plant. Also, we collected rain water from the roofs of the buildings and runoff before discharged it into local ponds and canals around university. For the wastewater treatment system, we used Sequencing Batch Reactors (SBR) to treat at approximately 1500 m3/d. All routine treatment parameters were analyzed by our technicians and confirmed results have been checked by the certified laboratory. High performance of WWTP are achieved with the treatment efficiency of more than 90%, which is safe to release to the environment. The results of wastewater analysis are reported as followed. The effluent from the treatment plant is further reused for landscape irrigation and agricultural purposes. Approximately 1000 m3 /d. of effluent was produced and more than 60% was collected in the pond nearby. This storage water has been used for landscape irrigation and horticulture crop during dry season in the campus. The remained 500 m3 of water has been used for grassy area through the PVC piping system. Sludge from the treatment plant was stabilized and dried before using as soil amendment for agricultural purpose. Moreover, the pilot model of ecological sanitation or ‘ecosan’ has been applied and installed at 7 main buildings, with the total amount of 303 toilets. These are in the main canteen, Sports’ Complex, 70th year study center, 80th year study center, the Faculty of Agriculture, swimming pool and Chootiwat Building. The project safely reused excreta for landscape management inside the campus. (More info: https://drive.google.com/file/d/0BxYJbR9BorLLRGVNZzdJX1FKZjRaUGVXZVRHQVZLTGNoMEkw/view?fbclid=I wAR3TXR1Ss9kvrdPJ60uLBADAOiW4jCmNKlrn1gUQ7lUSRFQNYIvDlzxpaqw)

Organic Waste Treatment

To convert yard waste (almost 10 tons per year) into composting, the Faculty of Engineering and Agro-Industry has a project called 'IAM ONG' started in June 2020. The project was initiated and developed by Associate Professor Teerapong Sawangpunyangul and his teams. By using an aerated static pile composting process, yard waste from landscape management (trimming and cutting) on our main campus were collected and transported to the composting area. Consequently, we have successfully dealt with nearly 3 tons of yard waste.

Adding on to this success, Prof. Dr. Arnat Tancho created another project regarding food waste management. Subsequently, almost 100% of food waste was separated and collected from each canteen and food shop for treatment.

The food waste was transferred to a vermicomposting area for fertilizer production and was used for soil development.

(More info:

1. https://www.facebook.com/CompostClassroom/?fref=photo 2. https://www.facebook.com/maejonaturalfarming/)

Safe the nature project, MJU-Maejam Model

Traditionally, the villagers have been occupying the main occupation of agriculture and monoculture for ten years. The forest area is missing a lot, the soil is dry and the villagers lack income. Therefore, the Natural Safety Project was created to (Mae Pan-San Giang model). After the water system has been installed causing farmers in the Maejam area able to do high-altitude farming throughout the year with income and occupation mixed Including the occurrence of maintenance, and restore natural resources Making ecosystems come back and fertile The change of the people in the community. It is driven by community enterprises.

One of Maejo University missions is to promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.

Financial Aid
4 Projects

Social Need in Northern Region

Topic: Seeking for Social and Economics Needs in Northern Thailand Detail: Dr. Somkid Kaewthip, a lecturer of the School of Administrative Studies conducted a research on this topic supported by the Thailand Science Research and Innovation (TRSI). It aimed to seek for social and economic needs in Northern Thailand. Two sets of questionnaires were used for data collection based on six (6) aspects: society, economy, environment, peace, human rights, and justice, The first questionnaire was the survey on tendency of situations in Northern Thailand. The second one was the survey on important development issues as well as policy achievement towards each issue problem solving and knowledge condition. Obtained data were analyzed by using descriptive statistics and co-efficient correlation. Results of the study were as follows: Strategic direction of the development covered five (5) aspects as the following: 1. A decrease in land holding for farming This should be the participatory planning on the management of land utilization among concerned agencies for fair farm land allocation. 2. Farming system which did not contribute to food insecurity This should construct farmer awareness of continual farming for food security. Database on production factors of the community should be developed based on the consistence with local resources. The following should be promoted and supported: 1) innovation about food security and sustainable agriculture; 2) value of integrated farming and agro-forestry; 3) management of integrated and sustainable agriculture; 4) sufficiency farming for food security; 5) soil and water management for farming; 6) promotion of sustainable land utilization; and 7) knowledge, technology, and innovation on agricultural production and marketing. 3. Inequality of the educational system Opportunity in education must be promoted particularly on people in remote areas and those having less opportunity in education, The learning content must include life skill development, career path preparation, food security construction, community based education, etc. 4. Lack of community economy development on the basis of culture and natural resources The community should be supported on welfare and economic management. This includes marketing networks and revenue generating as well as economic system under the concept of cultural economics. 5. Consecutive PM high level It should have the development of the community economy in the forest area in order to reduce forest burning for sustenance, Also, it should have the collaboration with neighboring countries in terms of smog problem.

Singha-Prai (Forest Lion) Academic Project

School of Administrative Studies has put in place strategies for developing academic learning, morality, and ethics by inserting a wide variety of academic knowledge, responsibilities to oneself and society, morality, and ethics in various subjects and activities. The school also encourages students to learn from experienced people, case studies, or study tours in related social issues, for example, corporate administration, transparency, and good governance, and political, economic, social, and cultural development. The main aims of these activities were to enable the students to learn and develop more skills that can be applied to their studies and career after their graduation. Therefore, the Bachelor of Political Science and the Bachelor of Public Administration Programs organized Singha-Prai (Forest Lion) Academic Project on February 11-12, 2020 at the School of Administrative Studies. There was a total of 350 participants who were lecturers and students from higher education institutions in the upper northern region. The activities on those days were: 1) Painting competition on "Reflection of Current Thai Politics", 2). Quick academic response competition on Political Science and Public Administration, 3) Academic discussion on "Constitution ’60: Opportunities or Obstacles of Thai Society", and 4) 11th Exhibition of Political and Social Philosophy on "The Tragedy & Injustice." As a result, more than 500 participants were joining the project and a budget of 45,000 baht was spent. Approximately, 95% of students gained knowledge in political science and public administration, 94% of them could demonstrate their knowledge, abilities and exchanged ideas in political science and public administration, and 92.00% of them thought that they could apply what they gained for their learning and operation.

Student Leader Candidates' Vision Show for the Academic Year 2019 Project

The Student Club of School of Administrative Studies organized Student Leader Candidates' Vision Show for the Academic Year 2019 Project. The purpose of the event was to promote good citizens, democratic ways, and the election of undergraduate student organizations for persons with desirable characteristics on qualifications, morality, and ethics, knowledge, intellectual skills, interpersonal skills, and responsibilities. The event took place on February 5, 2020, at Norasing Meeting Room, 2nd Floor in Theppong Panich Building at the School of Administrative Studies. It was expected that the undergraduates be creative in democratic activities. The activities on that day were the show of visions of the candidate for the student leaders for the year 2019, both the president of the School of Administrative Studies Club and the President of the Student Organization. Besides, there was a campaign for undergraduates to go for the election. As a result, 281 undergraduate students joined the activities and they were found creative in democratic brainstorming. Approximately, 98.00% of them were in line with desirable characteristics on qualifications, morality and ethics, knowledge, intellectual skills, interpersonal skills, responsibilities, numerical analysis skills, communication skills, and skills for the use of technology.

Social Innovation and Peace Studies Center (SIPS)

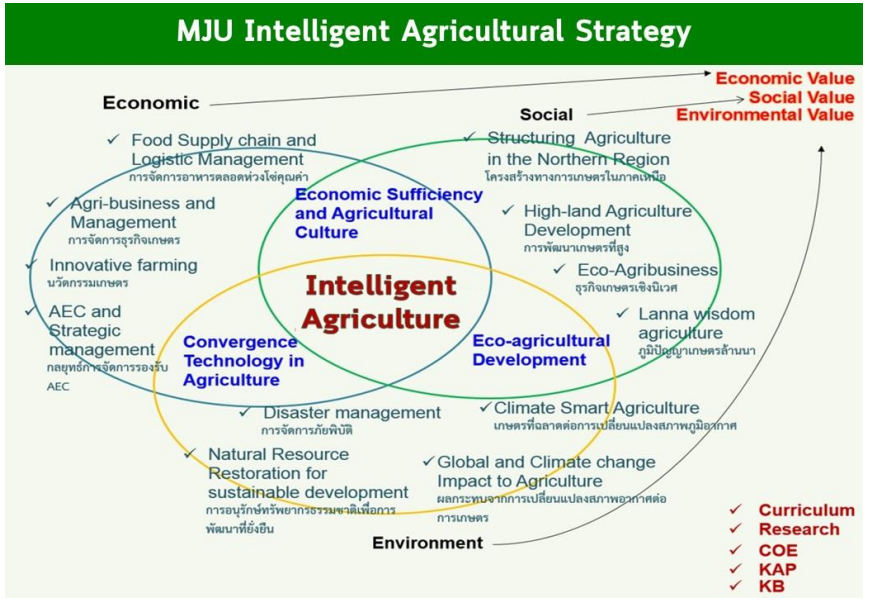
The main objectives of this center are 1) to promote and support education and social research to create social understanding, reduce conflicts and live together peacefully,

2) to develop a body of knowledge and social innovation to keep pace with the changing situation of society and technology, and

3) to build academic cooperation with public and private organizations.

17 PARTNERSHIPS FOR THE GOALS

Strengthen the means of implementation and revitalize the global partnership for sustainable development



Maejo University is highly engaged with local public sectors. Sharing with local, regional and international institutions, NGOs, and other private universities to achieve most of SDGs.

- Sansai Model
- The Integration of Snakeskin Gourami Fish Farming in Biofloc Technology System with Vegetables Production for Commercial to Develop Food Industrial in Northern Region
- Eco-Tourism Training and Cultural Exchange Program for Students from Miami University

National Networks
International Collaboration
8 Projects

17 PARTNERSHIPS FOR THE GOALS

MJU Intelligent Agriculture Strategy

Maejo University has set goals for the development of knowledge, “Intelligent Agriculture” in order to create value for society in terms of economy, society, and environment, to integrate the knowledge of agriculture which is the university's expertise, and to meet the needs of the country. The University implements and delivers these goals through teaching and learning, research and innovation, cultural preservation, and community services. MJU Intelligent Agricultural Strategy comprises three main facets: Economic Sufficiency and Agricultural Culture, Eco-Agricultural Development, and Convergence Technology in Agriculture. Importantly, the MJU Intelligent Agriculture Strategy serves all the UN SDG components.

Development Framework of Maejo University - 15 Year Plan (2012-2026): Maejo University Road Map 2026

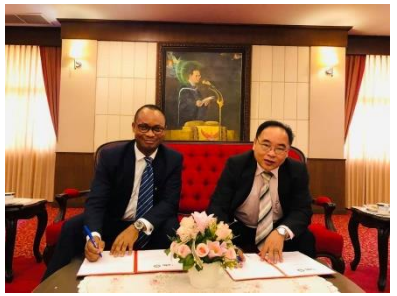
An internationally recognized university of agricultural excellence

Maejo University: (Maejo: University of Life) 1) Maintain agriculture as main foundation 2) Conserve nature and environment 3) Nurture excellent culture and tradition 4) Keep pace with changes 5) Uphold good governance

	Organic University			Green University			Eco University		
Flagships	*“The university emphasizes the use of organic materials, and not the synthetic inputs in the production process, promote biodiversity, increase the fertility while decreasing pollution in the soil, water and air, utilize farm renewable materials and attend to farm products with care.”*			*“The university develops properly by creating balance with nature and becoming a Green University must emphasize the preservation of nature and environment, excellent cultures (Maejo culture, agriculture culture, Lanna culture and Thai culture) and high morality (good governance)”.*			*“The university creates balance of joint existence between man and nature with completeness and sustainability by considering the real happiness of men, development of minds and building up of sensible consciousness for its students and personnel.”*		
Goals	On academics * Academic program offering of organic agriculture * Production of graduates of organic agriculture * Available list of courses on organic agriculture * Every graduate has basic knowledge of organic agriculture	On research and services * Achievements on research and innovation related to organic agriculture * Possession of knowledge from upstream to downstream. * Available university personnel who are experts in organic agriculture in every aspect, from the source of the water to its end	On physical structures and administration *Existence of basic infrastructure intended as learning sites for organic agriculture, e.g. organic canteen, organic farm, organic fertilizer shed, etc., have been constructed. *Consciousness and awareness of students and staff on consumption of safety food	On academics * Academic program offering on alternative energy and environment that is accepted internationally. * Production of graduates with degrees on alternative energy and environment. * Consciousness on energy and environmental conservation	On research and services * Achievements on research and innovation on alternative energy and environmental conservation. * Maejo University serves as a model of Green Community and learning site for other communities.	On physical structures and administration *Available basic infra structures to support Green University, e.g. walkways, bicycle lanes, joint parking lots, green building designs, etc. * Decrease in greenhouse gas in each supply chain of consumption * Use of alternative energy within the university * Reduction in waste to the minimum * Ranking points as a green university attained by the Maejo University	On academics * Academic program offering and list of courses related to ecosystem and agricultural technology that is modern and allied with the environment. * **Graduates of Maejo University who have good attitude of loving and being happy with the environment.**	On research and services * Achievements on research and agricultural innovation that are allied with the environment and are “climate smart agriculture”. * Has the ability to lead the society in issues related to the conservation of the environment and to sustainability.	On physical structures and administration *Available model basic infra-structures, e.g. Eco Building, Smart Farm * There are policies towards physical development to create happiness and contentment among students and personnel. * Available sources of knowledge for learning in each faculty for students’ happiness in their university life. * There is rotation in the use of land, water and energy resources (reuse, reduce, recycle) with quality and sustainability.
Strategies	1. Create a coordinating center for organic agriculture. 2. Produce graduates who possess knowledge of organic agriculture. 3. Develop short-term and long term curricula and training programs including courses on organic agriculture. 4. Develop researchers and experts on organic agriculture. 5. Build and transfer knowledge and innovations on organic agriculture. 6. Create networking and become leaders of organic agriculture at the national and international levels.’ 7. Establish balance between soil, water and environment in a long term basis. 8. Build consciousness and awareness on the consumption of safety food among students, personnel and the community by constructing a food shop and commercial outlet inside the campus and the surrounding areas. 9. Develop a system to certify the standards for organic agriculture. 10. Improve a model site for organic agriculture in a Lanna way and Organic Smart Farm which consists of a rotation of resources from within the campus. 11. Build up the database and website for organic agriculture. 12. Create and develop the internal and external cooperative networking with outside organizations such as local educational institutions, province, ministerial and private organizations on the national strategic movement of organic agriculture.			1. Create a Green University master plan and improve the basic infrastructure, e.g. bicycle lanes, walkways, parking lots and increase green areas. 2. Develop researchers and experts on environment and alternative energy. 3. Improve the university to be safer from liquors, cigarettes, drugs, entertainment areas 4. Reduce amount of waste and non-usable materials within the university. 5. Decrease the use of energy and promote the use of alternative energy. 6. Reduce the number of vehicles and motorcycles but promote the use of bicycles, walking or public transportation. 7. Improve the academic curriculum for teaching and learning of courses on environment. 8. Develop and transfer the knowledge and innovations on environment and alternative energy 9. Build MAEJO University as a Green Society 10. Create consciousness towards environmental conservation among students, staff and communities. 11. Develop the model site, “Green Campus”. 12. Reduce greenhouse gas emission in every part of the supply chain.			1. Promote the rotational use of resources within the university. 2. Conduct activities to create better consciousness and happy lifestyle continuously for students and personnel. 3. Build a joint center for separating, sorting, and recycling of waste and garbage. 4. Set up policies and activities to reduce the use of energy within the university. 5. Promote to allow each unit implements the basic 3R to decrease the amount of waste and garbage. 6. Develop the academic curriculum for teaching and learning including the list of courses related to balanced and sustainable existence with nature. 7. Transfer the knowledge and create participation with the communities in environmental conservation. 8. Build and transfer the knowledge and innovations in agriculture that are smart towards climatic changes (Climate Smart Agriculture) 9. Design and construct eco-zones and buildings. 10. Develop the model sites or building for ecosystem (Eco Building / Smart Farm).		

MOU with Nigerians in Diaspora Organization (NIDO).

The Technical Short-Term Training Programme on Agriculture for Nigerians was sealed with MOU signing between Associate Professor Dr. Weerapon Thongma President of Maejo University and Dr. Lloyd Nwafor President of Nigerians in Diaspora Organization (NIDO). Nigeria in Diaspora Organization (NIDO) Thailand Chapter to Maejo University. NIDO is an organization set up by the Nigerian Government in 2002 to essentially harness and bring together, Nigerians who have migrated to various parts of the world and have acquired valuable skills for the benefits of Nigeria. The basic aim of NIDO is to encourage skilled Nigerians in Diaspora to make their contribution to the development process of Nigeria and their host country. It was with this aim in mind that NIDO Thailand was established on 23rd March, 2013 by the Embassy of Nigeria in Thailand. The group of NIDO representatives were led by the President Dr. Lloyd Nwafor Lecturer, International College, North- Chiang Mai University, Dr. Kolie Beatrice (Secretary of NIDO) and Teacher/Head of Foreign Languages Department, Pattanawit School, Nonthaburi), Mr. Ibrahim Bukari (C.E.O, Jaspar Holdings Ltd. Partnership and Butterfly Holdings Ent. Co. Ltd Bkk), Engr. Chris C. Mbazuigwe (C.E.O, Xnon International Ltd), Chief (Elder) Evans Ugwoeruchukwu (M.D, Fear-God Interbiz Co Ltd, Thailand), Mr. Ani Lugard Ejike (Supervisor, RS Transport Co, Ltd Thailand). The meeting also had the representatives of the Nigerian government, Mr. Nicholas Uhomoibhi (Head of Chancery, Embassy of Nigeria) and Mr. Lorpuu Selu Obi Victor (Victor Iorpuu) (Embassy of Nigeria). The objective of NIDO on this meeting was to discuss on future Short-Training Program on Agriculture for Nigerians in terms of Poultry and Catfish Training, including Feed formulation on the stated areas. (For more information: https://www.facebook.com/MaejoUniversityInternationalCollege/posts/426845031464841; https://www.facebook.com/MaejoUniversityInternationalCollege/posts/410692549746756)



AAUN & AAACU International Forum and UPLB Alumni Association of Thailand Summit: Innovation, Globalization and Sustainability

On the 14th of December 2019. Maejo University International College hosted AAUN & AAACU International Forum and UPLB Alumni Association of Thailand Summit: Innovation, Globalization, and Sustainability. The event was held to welcome Honorable guest speakers from the Philippines (Prof. Dr. Blanda R. Sumayao, Prof. Dr. Levita A. Duhaylungsod, Asst. Prof. Dr. Filma C. Calalo, and Dr. Ethel Agness Pascua-Valenzuela) and special guests from United Nations Office for South-South Cooperation (Mr. Adisak Jantatum, and Mr. Denis Nkala. More info: https://www.facebook.com/MaejoUniversityInternationalCollege/photos/a.582044899278186/582049525944390/ https://mju-ic.mju.ac.th/wtms_newsDetail.aspx?nID=22045

The New Graduate Program for the Future Industry (New S-Curve)

17 PARTNERSHIPS FOR THE GOALS

The New Graduate Program for the Future Industry (New S-Curve) aims to develop human resources and increase the competitiveness of manpower to support the development of future industries (New S-Curve). The success of the activity achieved the goal of 300 people with 548 participants, representing an increase of 82.66% from the target. Relevant to the implementation of this project is the draft of the new graduate program, the Renewable Energy Engineering course, and the Energy Conservation Engineering, and a set of materials from the training within the project, an air conditioning system, and energy conservation. There were 5 training courses for teaching and learning materials for the students in the renewable energy program at Maejo University. The external project evaluation was found that the efficiency of the operation was measured by the satisfaction of the people/beneficiaries of the project. The result from the project evaluation showed that people/beneficiaries were satisfied with the implementation of the project at a high level.

Driving Academic Service to Ban Wang Chomphu Community, Saraphi District, Chiang Mai Province

The Faculty of Fisheries has strengthened local fishery communities in Chompoo Sub-district, Saraphi District, Chiang Mai Province. The project aims to promote and develop career in the community by training people to have problem-solving skills and have alternative careers. The faculty held a training program, “The Integration of Snakeskin Gourami Fish Farming in Biofloc Technology System with Vegetables Production for Commercial to Develop Food Industrial in Northern Region” by Assistant Professor Dr. Jongkon Phomya as the project leader, on July 12th, 2019 at Muang Jai Organic Farm, Chompoo Sub-district, Muang District, Chiang Mai Province. In addition, the faculty also held a workshop on " Cultivation, Processing, and Organic Certification of Nile Tilapia (Oreochromis niloticus) in the Biofloc Technology System” by Prof. Dr. Nisara Kitticharoen on 16th -17th August 2019 at Muang Jai Organic, Saraphi District, Chiang Mai Province. The results of the project showed that the participants have knowledge on Tilapia fish in the Biofloc technology system, understand the environment-friendly fish farming system, and were able to circulate and manage resources to achieve a suitable ecosystem. They cultivated fish in dense quantities under effective environmental management, using biological microorganism innovations, reduction in food cost, water consumption, and wastewater from farming systems, and less labor. The yield of 300 fresh tilapia or about 75 kilograms per 4-month production cycle generated income 15,000 baht / year, payback period of 2.5 years. In addition, the Faculty of Fishery is the consultant for the implementation of the Tilapia cultivation in the Biofloc culture system, together with the innovation of Maejo University. The National Innovation Agency (NiA) granted the community to apply this fishery innovation as their business model to create sustainability for the community in the future. The local fishery community group, Chompoo Sub-district, Saraphi District, Chiang Mai Province also received the certification of the Department of Fisheries and IFOAM's aquaculture products production system standards.

The School of Administrative Studies of Maejo University signed a memorandum of understanding (MOU) with Sansai District Office to develop potential of community leaders in Sansai District

17 PARTNERSHIPS FOR THE GOALS

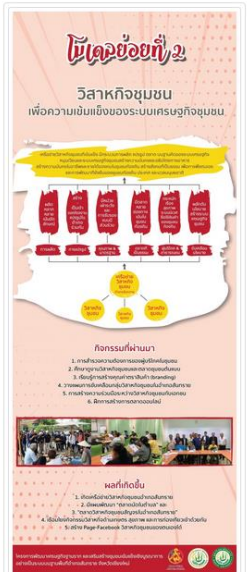
The School of Administrative Studies agreed to set the strategic plans, organizing training courses, and research to develop a well-being school model that connects educational institutions, agricultural organizations and local government organizations. The project was in accordance with the Chiang Mai agenda for the school well being. Two hundred-fifty participants were involved in the 5 training courses during 15 - 30 June 2020 at the model schools under the supervision of the Chiang Mai Provincial Administrative Organization. The training focused on the transformation of the participants’ mindset, networking, and designating committee to be responsible for each training course.

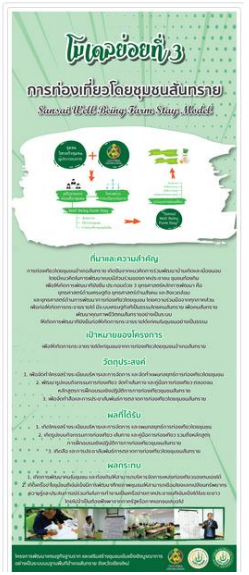
More details: https://www.chiangmainews.co.th/page/archives/1389671/
https://www.facebook.com/SASMJU/posts/2994397537246822

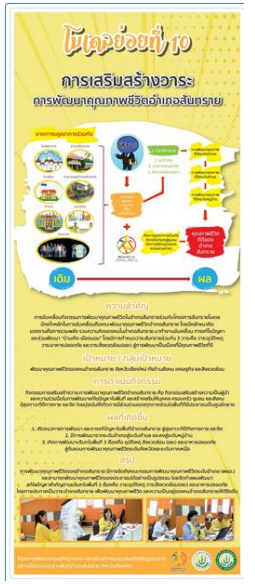
The project for development of community economy and strengthening by systematic community integration base on area based collaborative approach, San Sai District, Chiang Mai Province

17 PARTNERSHIPS FOR THE GOALS

As noted in the memorandum of understanding (MOU) between Maejo University and the San Sai District Office on 21 June 2019 – 30 September 2021, the School of Administrative Studies of Maejo University has organized the project for the development of community economy and strengthening by systematic community integration base on area-based collaborative approach, San Sai District (San Sai Model) in the fiscal year 2019. The project aims to develop community leaders to have concepts and practice on sustainable self-reliance. These leaders work collaboratively in developing devices focusing on the use of knowledge and intelligence to solve problems and establish the development plans at the community, sub-district, and district levels. The project also supports the development of all 10 models through research activities, training, study visits, supporting of the impact of inputs, processing, and marketing until such models can be actually operated. The project has incubated 354 leaders with a paradigm or way of thinking about sustainable development in community development in San Sai District. The project creates a development model with community leaders to provide a new alternative way of problem-solving in their local communities through the 10 sub-models, establishing a food safety system, creating a new, fair economy with more options through linking farmers with consumers, and networking of community enterprises to increase economic value as well as supporting tourism based on the concept of "San Sai Well Being Farm Stay" that emphasizes on lifestyles and sustainable natural resources. The project also establishes a whole society, community welfare system, promotes community health and dimensions of community management in a multilateral manner, and increases income to the 30 organic farmers up to 93.0%. In addition, results from the project implementation also causing groups "San Sai District Panya Council", which is a gathering of leaders in San Sai district mechanism for driving the intelligence council with a role as a source of wisdom of local people and a local council for proactive development and a clear direction of development based on more complex problems. In addition, the integration between the departments and the Quality of Life Development Committee of San Sai District can be linked to three important issues: the Food Safety Agenda. Accident agenda and environmental agenda by expanding the development results to create a quality of life development committee at the sub-district level to distribute the development to each sub-district in San Sai District Linked to the Public Health Hospital, Medical Sciences Center 1, Police Station in San Sai Local government organization and San Sai District. For more information: https://www.facebook.com/%E0%B8%AA%E0%B8%B1%E0%B8%99%E0%B8%97%E0%B8%A3%E0%B8%B2%E0%B8%A2%E0%B9%82%E0%B8%A1%E0%B9%80%E0%B8%94%E0%B8%A5-sss-170189240235743







The development of the capacity of local community leaders in the management of economic, social and quality of life development in San Sai District using the Sufficiency Economy Philosophy and Sustainable Development

The College of Administration has made a memorandum of understanding (MOU) to develop leadership potential in Sansai District with Sansai District governors, Chiang Mai Province. The objective is to develop knowledge, capabilities and potential of government leaders. Private sector and civil society in the management of economic, social and quality of life in Sansai District by adhering to the principles of Philosophy of Sufficiency Economy and Sustainable Development. The project is elevated from the foundation economic development project and strengthening an integrated system based on the Sansai District area or San Sai Model, which was conducted in 2018-2019, in the year 2020 focused on the development of leaders in all sector, both government leaders, private sectors and civil society. However, due to the COVID-19 situation, the project has changed the workshop training to be online training courses. The project has organized 8 online training courses (45 sections). Four hundred community leaders from all sectors participated in this training to increase their potential with knowledge of concepts, political theories, governance, public administration, community groups and organizations, case studies for agencies / organizations / communities and successful models at each level as learning models.

17 PARTNERSHIPS FOR THE GOALS

About this Report

This report summarizes the range of Maejo University's activities to achieve the UN Development Goals (UNSDGs). Most of these activities can be identified under research, teaching, operations, public engagement and partnerships. We have evidenced the report with both quantitative and qualitative information in terms of metrics and case studies.

In order to select a diversity of university-wide initiatives, we have defined the most qualitative case studies that have been conducted through extensive consultation with key stakeholders involved in these activities. The case studies show their significant contributions, impact and distinctive features to the respective SDGs. Only a few of our numerous initiatives were identified in this SDG report. We intend to build a platform for further development to demonstrate our efforts towards the SDGs

New challenges have been created this year and a collective opportunity to overcome them. Many of our ongoing practices and many SDGs were disrupted by the Covid-19 outbreak. Our focus is on the reduction of inequality, poverty and hunger among our staff, our students and the wider community, and work for good health and well-being among the people around us. We have addressed the world pandemic's previous events. The report for this year is a list of our ongoing activities and initiatives, many improvised to face the challenges of the global pandemic. We remain committed to the Sustainable Development Goals of the United Nations and believe that our hard working and our networks will help recover better post-pandemic.

University Impact Rankings for the SDGs

World Ranking	SDG 2 Zero Hunger	SDG 15 Life on Land	SDG 12 Responsible Consumption and Production	SDG 1 No Poverty	SDG 17 Zero Hunger
201 - 300	39	97	101-102	201-300	401-600

Country Ranking	SDG 2	SDG 15	SDG 12	SDG 1	SDG 17
5 tier	2	5	4	7	11

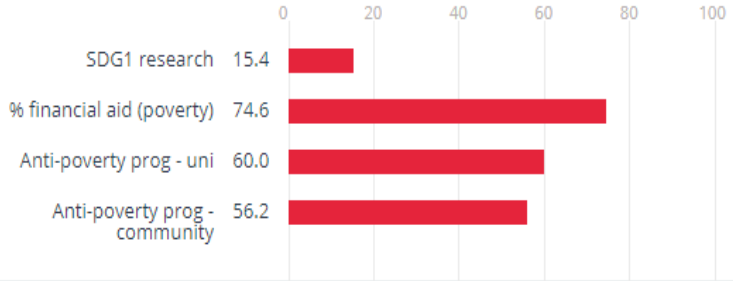
มหาวิทยาลัยแม่โจ้ MAEJO UNIVERSITY | MJU

Sustainable Development Goals Breakdowns

About the SDG Scores

1 NO POVERTY

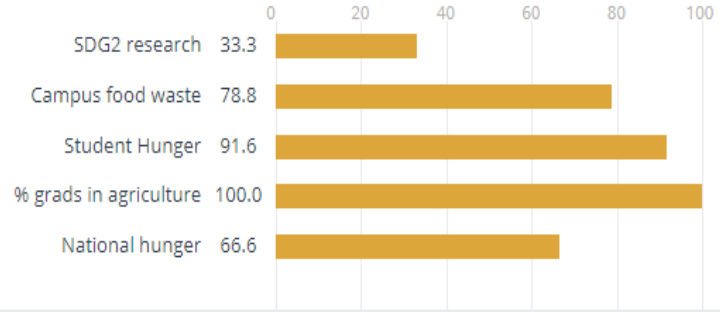
SCORE 51.0 RANK 201–300 out of 591 institutions



2 ZERO HUNGER

QUALIFYING SDG - 26% OF OVERALL

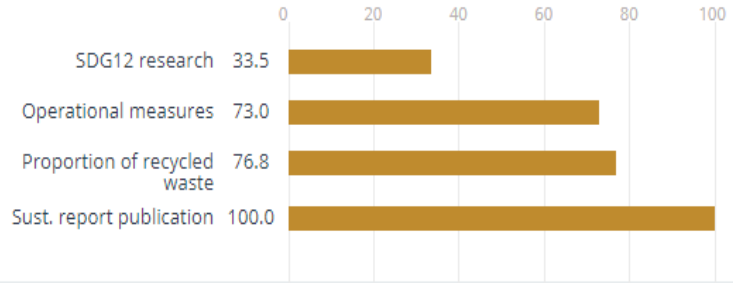
SCORE 70.7 RANK 39 out of 442 institutions



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

QUALIFYING SDG - 26% OF OVERALL

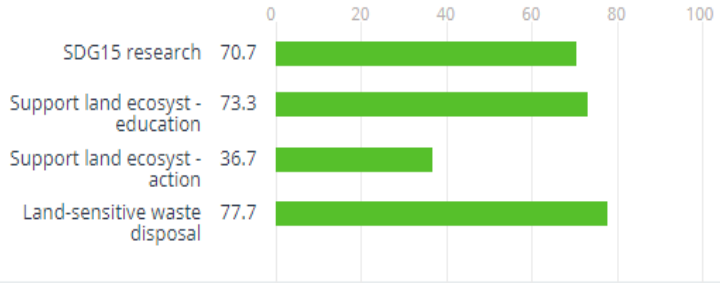
SCORE 68.6 RANK 101–200 out of 503 institutions



15 LIFE ON LAND

QUALIFYING SDG - 26% OF OVERALL

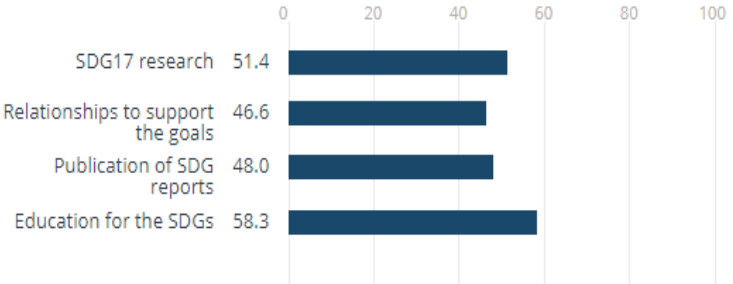
SCORE 63.7 RANK 97 out of 402 institutions



17 PARTNERSHIP FOR THE GOALS

MANDATORY QUALIFYING SDG - 22% OF OVERALL

SCORE 51.5 RANK 401–600 out of 1154 institutions



Maejo University Impact Rankings 2020