LANNA

ALIVE

CMU CHIANG MAI UNIVERSITY | SUSTAINABLE DEVELOPMENT GOALS

PRESIDENT'S ADDRESS

On behalf of Chiang Mai University, I am pleased to present Lanna ALIVE, our 2025 Sustainable Development Goals Report.

For several centuries, Lanna was a major kingdom in what is now Northern Thailand, with Chiang Mai as its capital. Although Lanna's political power eventually waned, its cultural vitality remained an enduring influence that extended beyond the borders of the present Thai nation. Lanna's name -Land of a Million Rice Fields- embodies a way of life that still shapes the region's identity.

For more than a decade before CMU opened in 1964, residents of Chiang Mai campaigned for a university in their own region. Our university was called into being by the people it serves. It is our responsibility to respect and protect what previous generations handed down — manuscripts and languages, folk wisdom and festivals, productive fields and biodiverse forests, life-giving water, pollution-free air. It is our responsibility to study more deeply, with scholarly patience and insight, the region's history, culture, and natural environment, whether or not that knowledge has immediate application.

But we are not here simply to observe and preserve — conservation often depends on active innovation. Out of appreciation and respect, we seek to beneficially apply our knowledge in partnership with the people and communities we serve.

To conserve, to learn, to participate, to innovate — the following pages describe how CMU works to create a sustainable future for Lanna and beyond.

PROF. PONGRUK SRIBANDITMONGKOL, M.D., Ph.D.
President of Chiang Mai University

LANNA ALIVE





TABLE OF CONTENTS

i President's Address
01 CMU at a Glance
02 Carbon Neutral by Design

AWAKENING
03 CMU's 5 Strategic Objectives for Sustainability
05 What is Lanna?

LIVELIHOOD
08 "Have You Eaten Rice Yet?"
09 "Yes, We Have Eaten Rice"

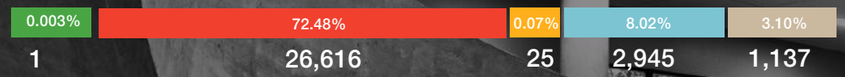
INTERCONNECTION
11 Lan Na And Beyond
13 Decoding Diversity for Better Health

VITALITY
15 The Richness and Vulnerability of Traditional Medicinal Knowledge
17 Melioidosis – Unmasking The Great Imitator

EMPOWERMENT
19 Spirit of TON PAO -Reviving Lanna Craft Through Academic Engagement
21 Strengthening Communal Water Management
23 PRME -Business Education for Social Responsibility
25 Building Beyond Roads
28 Lanna Traditional House Museum

CMU
at a Glance

Total Number of Students, Academic Year 2025 : **30,724 Persons**



- Graduate Diploma
- Higher Graduate Diploma
- PhD programs
- Bachelor's Degree
- Master's Degree

Personnel : **8,087 Persons**



- Academic Staff
- Professional & Support Staff

Programmes Offered in Academic Year 2025 : **347 Programs**

- Graduate Diploma — 1
- Master's Degree — 136
- Bachelor's Degree — 116
- PhD programs — 89
- Higher Graduate Diploma — 3

SOCIO-ECONOMIC CONTRIBUTION

70 Billion THB
Socio-Economic Impact (2025)

Created through 5 strategic objectives or platforms linking education,health, research, and innovation.

SUSTAINABLE OPERATIONS

12.68 MW Solar Rooftops
7,982 tons CO_2 Reduced Yearly

CMU's living laboratory leads Thailand's path to carbon neutrality by 2032.

RESEARCH FOR IMPACT

6,512 SDG-Linked Publications (2021-2025)

Generating knowledge that advances all 17 Global Goals —a 12% increase year-on-year.

LIFELONG LEARNING IMPACT

400,000+
Learners Nationwide
840 Programs

Thailand's first Credit Bank System connects academic and informal learning for all ages.

CARBON NEUTRAL BY DESIGN

12.68 MW
Solar Rooftops
Powering 181 buildings and cutting 7,982 tons CO_2 each year

3,400+ TONS
CO_2 reduced annually
From CMU's waste-to-energy and circular biomass systems

11,000+ TONS
CO_2 reduced Sequestration
Generated through sustainable forest conservation, reforestation, and nature-based carbon sinks.

1,300+ TONS
CO_2 Greenhouse Gas Mitigation
Delivered via integrated solid waste and biomass conversion into Compressed Biomethane Gas (CBG) and renewable electricity generation.

25,000+TONS
CO_2 Annual GHG Abatement
Representing the university's total cumulative greenhouse gas emissions avoided per year across all climate mitigation initiatives.

2032 : Full Carbon Neutrality Goal
Reaching 75% reduction by 2030 through renewable energy

CMU's 5 Strategic Objectives for Sustainability

CMU's most recent Education Development Plan (2025) sets out five Strategic Objectives (SOs) to advance the university's mission of serving society in accordance with principles of sustainability.

The first focuses on improving the quality of campus life by adopting practices and developing systems that promote student safety, green energy, and carbon neutrality, creating models that may serve the country as a whole.

The second extends the university's societal commitment through the sustainable development of regional and national health care and elderly care.

The fourth promotes innovative approaches to education, while the fifth calls for collaborative research that applies new technologies for global betterment.

However, ——— the remaining Strategic Objective requires explanation.

Placed at the center of the four SOs, this third is not meant to stand alone. Indeed, the Education Development Plan makes clear that activities carried out under the other objectives should also contribute to its realization.

This central SO is called **"Creative Lanna,"** and it provides the organizing theme for this SDG report.





What is Lanna ?

LANNA was once a kingdom, with Chiang Mai as its capital. It is also the memory of that kingdom: a historical inheritance that has given Northern Thailand a distinctive identity and, in the national imagination, an aura of legend and fascination.

Lanna lives in language and literary tradition, temple architecture and art, music and dance, textiles and crafts, cuisine and festivals. It is equally present in the region's mountains, forests, river valleys, and lush plains – a landscape that draws visitors from throughout Thailand and around the world.

Yet Lanna is not a single people, culture, or belief. Northern Thailand is home to many different communities, devotions, and histories, as well as to people whose lives began elsewhere. Lanna's identity cannot be enclosed within the borders of a vanished kingdom or the nostalgic longings for a remote era.

Lanna endures because it is continually being reimagined and renewed through scholarship, art, design, science, technology, and public service. Sustainability gives that energy direction by conserving what is valuable and creating possibilities for future generations.

Situated in the former Lanna capital, CMU serves this diverse region by connecting cultural vitality with environmental stewardship and social betterment. The projects that follow invite readers to encounter Lanna in many dimensions and to see how its creativity contributes to a more sustainable country and world.











CMU's demonstration field - LRRC staff planting rice



indigenous varieties of rice



HAVE YOU EATEN RICE YET ?

Throughout Thailand, friends and relatives commonly greet each other by asking, "Have you eaten rice yet?" The question has more than dietary relevance. In its countless repetitions, it expresses an abiding concern for mutual well-being. Traditionally, rice has been the guardian of prosperity and the basis of a way of life. That significance is inscribed in the very meaning of the Thai word "Lanna"—"Land of a Million Rice Fields."

Many areas of Northern Thailand are still a patchwork of small family-owned land holdings. Unlike the few high-yielding cultivars that dominate Thai rice production, the grain from these plots represents hundreds of varieties consumed mostly by the growers themselves or sold in local markets. Often, these strains have been kept alive by indigenous ethnic minorities who have lived outside the mainstream of national economic development. As large-scale global agriculture increasingly narrows the genetic base of future rice production, Northern Thailand remains one of the world's great storehouses of rice biodiversity.

CMU's Lanna Rice Research Center (LRRC) treats this diversity not simply as a heritage to be preserved, but as a living resource for sustainable development. In collaboration with local growers, the center's survey and research activities have identified strains particularly rich in nutritional value or potentially valuable for their disease resistance or environmental adaptability. Such qualities can benefit farming households that consume their own rice while creating higher-value products for small-scale growers.

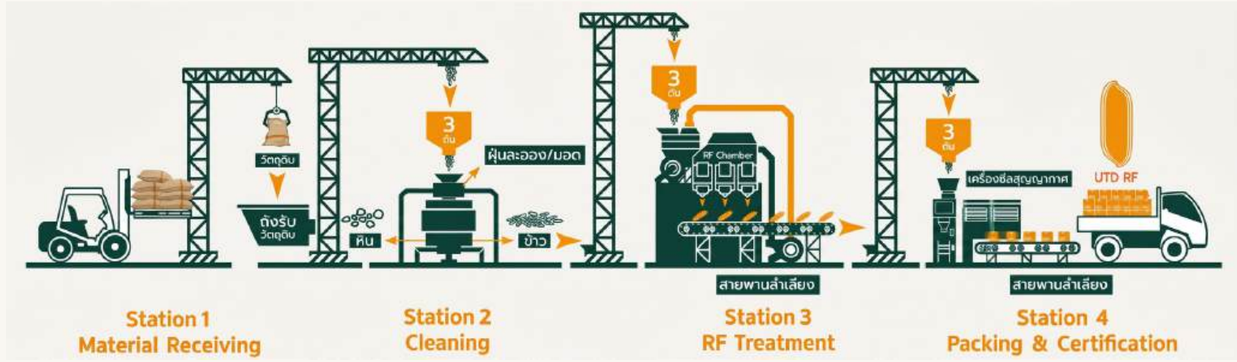
In 2025, as in previous years, the LRRC maintained a demonstration field for the propagation and improvement of indigenous rice varieties. The field serves as a learning site for farmers and students, as well as a source of genetic material for future research in sustainable agriculture.

“Yes, We Have Eaten Rice”

Rice is Thailand’s most important staple food and one of its major agricultural exports. Yet the climatic conditions favorable to its cultivation are also conducive to its destruction. Tropical heat and humidity encourage insect infestations during storage, threatening the quality and commercial value of Thai milled rice. The customary industrial response has been chemical fumigation, with potentially hazardous consequences for workers and the environment.

CMU began addressing rice-storage problems in the mid-1980s in collaboration with Germany’s University of Göttingen, which was investigating the thermal eradication of grain pests by radio wave energy. Over subsequent decades, CMU researchers in agricultural engineering, postharvest technology, food science, and other disciplines pushed the work forward, from laboratory studies to proof-of-concept demonstrations to the construction of an on-campus pilot plant. Finally, three decades later, the technology was ready for commercialization. The university’s chosen partner was Yont Phol Dee, an established Thai rice-milling company and equipment manufacturer.

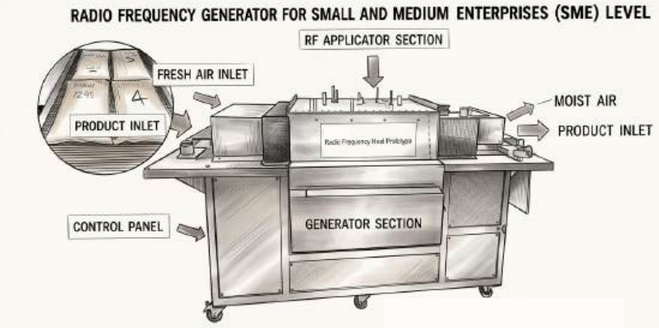
The resulting thermal radio-frequency technology, incorporated into Yont Phol Dee’s BIO-Q machines, maintains rice quality while generating heat within the grain to destroy insects at any stage in their life cycle. By eliminating the use of postharvest chemicals, the process preserves certification for organically cultivated rice, encouraging producers to grow a higher-value environmentally-friendly crop. In 2025, Yont Phol Dee received a national-level entrepreneur award from Thailand’s Ministry of Higher Education, Science, Research and Innovation in recognition of the company’s successful commercialization of CMU’s UTD RF technology.







UTD RF Pilot Plant ,Science and Technology Park, Chiang Mai University



18 rice mills with a total of **21** BiO-Q machines installed.



The university continues to work with Yont Phol Dee to increase the processing capacity of large-scale “BIO-Q” industrial machines, while developing smaller equipment for SMEs to handle family-sized packages of rice for sale in Thai supermarkets. In addition, CMU is collaborating with Yont Phol Dee in the development of the Rice Postharvest Technology Transfer Center— a rice milling school offering instruction in model postharvest practices. Milled products from the center will be sold under a social enterprise initiative that shares profits with participating farmers for environmental benefits.

LAN NA — AND BEYOND









Associate Professor Wasan Panyagaew, Ph.D.
CMU's Faculty of Social Sciences

SOCIAL+ CIENCES
CHIANG MAI UNIVERSITY

"In the early 1990s, I was working on an undergraduate degree in sociology and anthropology at CMU. All students in the program were required to take a course on the anthropology of Northern Thailand. It was then that I encountered Lan Na culture and history. Through this course I learned that what is called Lan Na Studies was a well-recognized field that extended beyond Thailand to include a broad group of peoples speaking related languages across upper Mainland Southeast Asia. I also learned that CMU was an acknowledged international hub for Lan Na research and fieldwork, having already produced foundational works on this culture area. In time, I too joined this effort as a teacher and researcher. It is my hope that CMU extends its distinguished legacy in Lan Na scholarship."

A thousand years ago, Northern Thailand had no fixed national boundaries. The region was a shifting mosaic of city-states vying for dominance, but joined by trade, language, religion, and custom. For almost three centuries —until its fall to a Burmese dynasty in 1558—the region's most powerful polity was the Kingdom of Lan Na, with its capital in Chiang Mai. The kingdom's influence extended westward into present-day Myanmar and northward toward what are now northern Laos and southwestern China's Yunnan Province. Today, scholars who study the shared heritage of the Upper Mekong borderland still refer to this broad cultural area as "Lan Na."

Lan Na was a center of monastic, historical, and secular learning. Knowledge that once circulated through oral traditions was written down in Tham script in codices of palm leaf and mulberry paper. Preserved in monasteries, these manuscripts received little scholarly attention as long as twentieth-century Thai historiography emphasized national unity at the expense of regional narratives. Soon after CMU opened in 1964, university-supported surveys began locating, cataloguing, and microfilming thousands of these documents, which transformed the scholarly writing of Lan Na history.

Among the students shaped by the emerging field of Lan Na Studies was Wasan Panyagaew, later a scholar of cultural identity across the Lan Na borderlands. In 2025, as dean of CMU's Faculty of Social Sciences, he published a textbook on Lan Na culture and history. That same year, he helped lead the international conference "Lan Na and Beyond," co-sponsored by the Princess Maha Chakri Sirindhorn Anthropology Centre. The conference treated Lan Na not as an isolated northern Thai inheritance but as a living cross-border cultural world. Presenters examined how the creation of national boundaries transformed Lan Na culture within polities, as well as how modern economic integration, with resulting cross-border migration, affected traditional cultural identities. By bringing scholars across borders into sustained conversation, the conference preserved cultural knowledge, broadened social inclusion, and helped deepen mutual understanding upon which peaceful regional cooperation depends.



Decoding Diversity

for Better Health

For more than two decades, CMU Associate Professor Dr. Jatupol Kampuansai has researched the history of Northern Thailand. Unlike colleagues in the social sciences and humanities, who decipher the region's past largely through documentary evidence, Dr. Jatupol conducts much of his research in a laboratory. Dr. Jatupol is a population geneticist, with a special interest in molecular anthropology. He collects and analyzes the DNA of ethnic and linguistic groups to help unravel the complex history of migration, settlement, and admixture that has created both the genetic diversity and shared genetic ancestry of the present-day Thai population.

In 2025, Dr. Jatupol was part of the international consortium that published a landmark population-genetics study of Mainland Southeast Asia (MSEA) in Nature, one of the world's leading scientific journals. Despite previous research efforts to characterize genetic variation in global populations, very little whole-genome sequencing data had come from MSEA – a region of nearly 300 million people inhabiting Cambodia, Laos, Malaysia, Myanmar, Thailand, Vietnam, and the southwestern Chinese province of Yunnan.

This under-representation was particularly severe for MSEA indigenous peoples. Although MSEA contains approximately one-third of the world's 470 million indigenous inhabitants, their whole-genome sequencing data, based on only 163 samples, represented a mere 0.02% of corresponding global data sets. The Nature study helped correct this imbalance by sequencing the complete genomes of more than 3,000 individuals from 30 MSEA populations, uncovering wide genetic variation that had been poorly captured in existing global genomic databases.

In addition to presenting new evidence concerning prehistoric migration and population dynamics in Asia, the study's documentation of the rich genomic diversity of MSEA has important medical implications. With a more representative genomic database, researchers are better able to identify population-specific genetic variants associated with disease, drug response, and other health characteristics. As the authors conclude, their findings establish "a basis for new discoveries and application of precision medicine . . . that will eventually benefit the health and wellbeing of Asian and global populations."



Associate Professor Dr. Jatupol Kampuansai
CMU's Faculty of Science

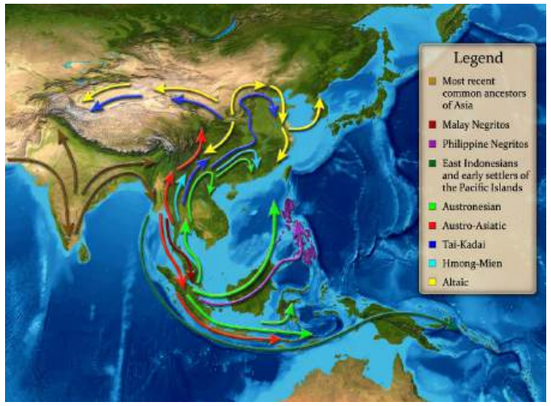
BE FUN FUNCTIONAL FUNDAMENTAL TO THE FRONTIER

We study history and try to answer the question, —— Where do Thai people come from ?

Some answers are in old palm-leaf chronicles preserved in Northern Thai temples. But these documents are known to mix folklore with fact. As molecular anthropologists, we can compare DNA evidence from groups living in Thailand with genetic databases of groups living beyond Thai borders. We have done this, for example, with the Tai Lue ethnic group, supporting, as manuscript sources indicated, that they did indeed move from Southern China to Northern Thailand.

Today, more than 60 ethnic groups live across Thailand, reflecting centuries of migration, interaction, and cultural exchange. Thailand has no single ancestral history. Despite shared beliefs and practices, we are a country of many cultures, many stories.

This kind of research is deeply collaborative. Consider the example of the Tai Lue group. Where do we go to collect DNA samples that represent "Tai Lue-ness"? At this point, we look for guidance from experts in history and the social sciences. After identifying Tai Lue communities, we then have to establish trust with community leaders, describing our collection procedures, explaining the purpose of our research, and guaranteeing the privacy of DNA donors.



Map illustrating the early migration routes of *Homo sapiens* into East and Southeast Asia, based on the genetic evidence. Each colored arrow represents the migration route of different ethnic groups. (Source: HUGO Pan-Asian SNP Consortium et al., 2009)





The Richness and Vulnerability of Traditional Medicinal Knowledge



Associate Professor Dr. Angkhana Inta
CMU's Faculty of Science

> "For me, ethnobotany has never been only about plants. It is about people, their lives, and the stories they carry."

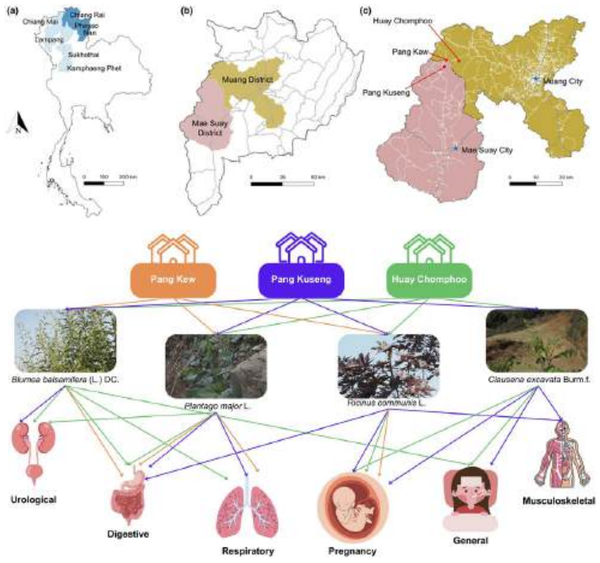
Over the years, I have had the privilege of walking through forests with people from ethnic communities in Northern Thailand. I have learned that a plant growing quietly along a forest path can hold many meanings. It can be food, medicine, a familiar scent in a family kitchen, or part of a tradition passed from one generation to the next.

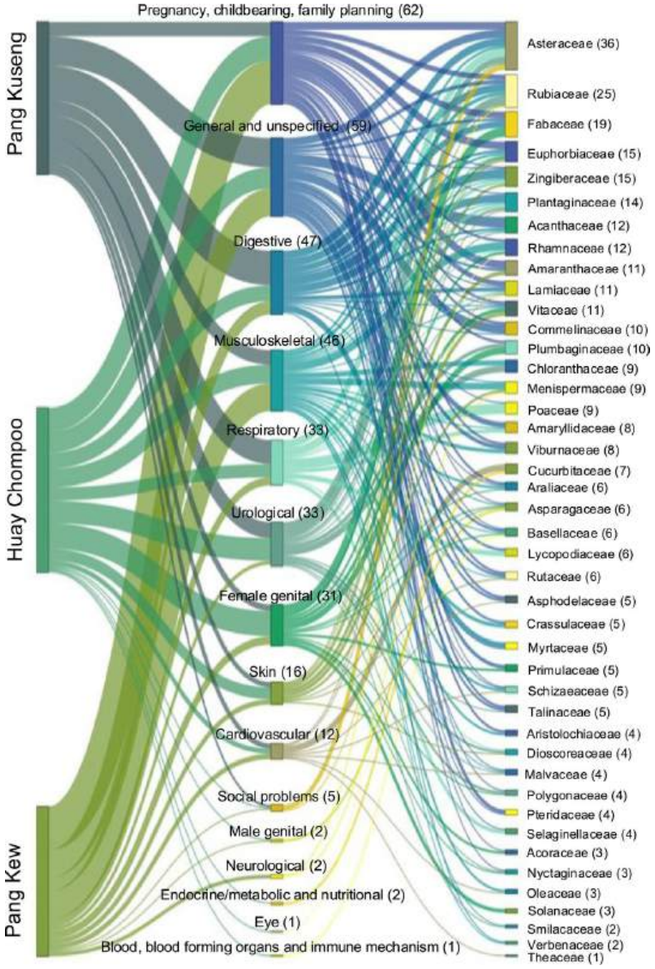
I have been especially inspired by women. Much of the knowledge about medicinal plants, food, childbirth, postpartum care, and family wellbeing is held and passed on by women. Yet their voices are not always heard. Listening to them has taught me that preserving traditional knowledge is also about recognizing the value of women and giving their knowledge the place it deserves.

This is not simply looking back at tradition. It is allowing local wisdom to inspire the future. When we listen, value, and creatively carry this knowledge forward, we keep alive not only plants and traditions, but also the voices of the people who nurtured them.

Plantago major L.







CMU CHIANG MAI UNIVERSITY | BE FUN FUNCTIONAL FUNDAMENTAL TO THE FRONTIER

At a time when laboratories and computers seem to be the main drivers of pharmaceutical research and development, it is easy to forget that many modern medicines had their origins in traditional plant-based remedies. Globally, many millions of people still look to neighboring fields and forests as an important resource for primary healthcare. This is especially true for indigenous peoples living in regions remote from mainstream medical services. Thailand – with its great biological and ethnic diversity – offers a compelling example. In 2018, a meta-analysis of Thai ethnomedicinal research co-authored by CMU biologist Associate Professor Dr. Angkhana Inta found that 22 percent of the country's approximately 10,000 plant species were reportedly used by ethnic groups for medicinal purposes – more than four times the global average.

In collaboration with European, Thai, and other Asian researchers, Dr. Angkhana's work at CMU's Ethnobotany and Northern Thai Flora Laboratory has been pivotal in documenting Thailand's herbal medicinal heritage. A 2025 study in Northern Thailand that she co-authored illustrates both the richness and the vulnerability of this knowledge. The research involved three ethnic Mien villages, which contained five surviving traditional healers, all women. Interviews with these healers and 90 other residents produced 352 reports of medicinal use involving 77 plant species in 46 families. Women's healthcare was a major category, with remedies associated with pregnancy, childbirth, and female reproductive conditions figuring prominently in the study's database. Yet traditional medicinal knowledge differed markedly among these three neighboring villages, even though they shared a common ethnicity and similar natural resources. Such findings emphasize how distinctive local traditions can be and how easily traditional knowledge can disappear as older healers die and younger members relocate to urban areas.

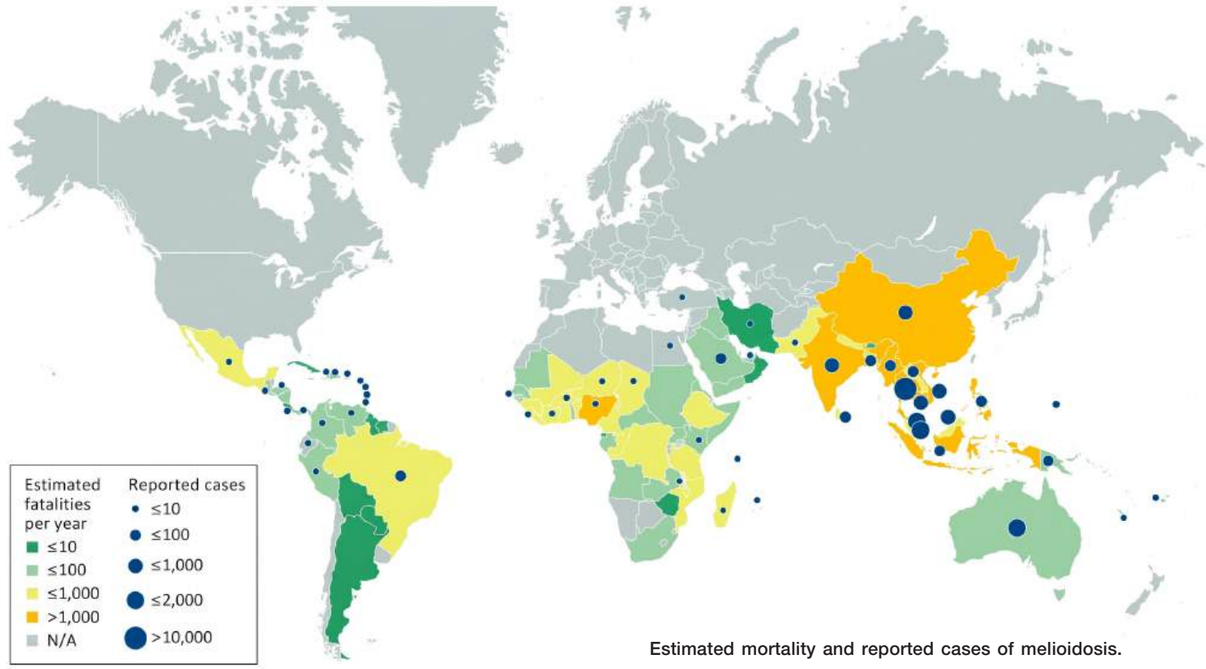
At the conclusion of the 2025 study, only 10 of the 223 Mien villages in Thailand had been the subject of ethnomedicinal field surveys. How many more herbal uses are awaiting documentation? Preserving such knowledge is vital for supporting sustainable medicinal plant use and conserving biodiversity. It also holds the potential for adding beneficial compounds to modern pharmacology while creating economic opportunities for the communities that understand the medical importance of local flora.

MELIOIDOSIS

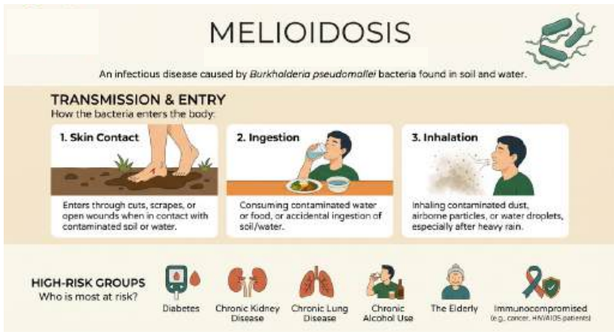
UNMASKING THE GREAT IMITATOR

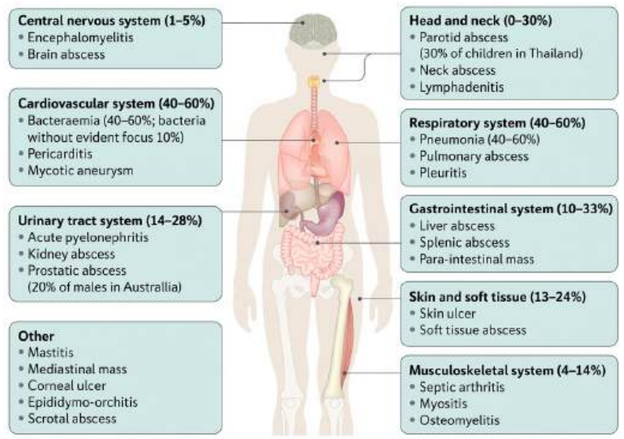
Melioidosis is one of Thailand's highly lethal endemic diseases, yet it is barely known outside the country's medical community. At home in tropical soils and flooded fields, its bacterial agent – Burkholderia pseudomallei – is a hazard to farmers working their fields without protective gear. In addition, inhaling contaminated dust or drinking untreated water can cause infection. A Thai nationwide study of more than 7,000 laboratory-confirmed cases reported a 30-day mortality rate of 39%. Known as the "Great Imitator" because it can resemble so many other maladies, the disease is frequently misdiagnosed and underreported. Modeling studies for Thailand have estimated 2,800 deaths a year, but the true burden is unknown.





Estimated mortality and reported cases of melioidosis.





Clinical manifestations of melioidosis.

One thing known for certain is that diagnosis and treatment of melioidosis are complicated by co-infections, as well as underlying health impairments, such as diabetes. Although prior international research had identified individual clinical factors associated with melioidosis, there was no comprehensive prognostic review assessing the influence of accompanying conditions on overall mortality risk. Such a study was well suited for CMU's Department of Biomedical Informatics and Clinical Epidemiology, which focuses statistical methods on clinical data to evaluate disease outcomes.

In 2025, two researchers from CMU's Biomedical Informatics program who had previously investigated this disease – Drs Pakpoom Wongyikul and Phichayut Phinyo – collaborated with researchers from other Thai universities to examine the role of comorbidities and co-infections in melioidosis fatalities. Their method was a systematic review and meta-analysis of more than 300 worldwide medical studies of melioidosis involving approximately 500 patients. A main finding was that disseminated melioidosis increased the odds of death by nearly fivefold, emphasizing the urgency of early diagnosis and aggressive management strategies.

Worldwide awareness of melioidosis is increasing, as clinical evidence suggests climate change may be expanding its range. Once associated mainly with Southeast Asia and Australia, melioidosis is now endemic to more than 40 countries, with an estimated 89,000 fatalities per year. CMU's melioidosis research has timely significance.

SPIRIT of TON PAO | Reviving Lanna Craft Through Academic Engagement



Crafts Person Making Saa Paper















For generations, the villages of Ton Pao Municipality, just east of Chiang Mai, have been known for turning the inner bark of mulberry trees into handmade “saa” paper – a centuries-old craft of the Lanna highlands that provided monks with sheets for religious manuscripts, households with ornamental lanterns, and villagers with colorful parasols for shade from the sun. By the late 20th century, export demand for ornamental Thai mulberry paper had turned a seasonal household occupation into a dedicated artisanal pursuit and an important source of community income. However, foreign competition and increasing production costs eventually undercut profits. At the same time, attempts to turn the community’s “cultural capital” into tourism-based income floundered, as tourists sought more contemporary paper designs or opted for experiential activities over souvenir purchases.

Against this backdrop of community decline, CMU mobilized administrative and financial resources to work with Ton Pao municipal officers, artisans, local groups, entrepreneurs, and students. Main objectives were to invigorate the area’s Lanna craft heritage with a spirit of communal enterprise that aligned traditional skills more closely with modern market demands and sustainable tourism. This initiative, which extended over a 16-month period during 2024-2025, was under the direction of Dr. Sasipatch Chaisiribodin of CMU’s Faculty of Political Science and Public Administration Department.



Dr. Sasipatch Chaisiribodin
CMU’s Faculty of Political Science and Public Administration Department.

As showcased in a three-day festival in August 2025, the “Spirit of Ton Pao” generated new entrepreneurial leadership, marketed freshly designed products, created five “low-carbon” cultural tours, and encouraged visitors to participate in craft-learning activities. The result was heightened community engagement for both locals and tourists alike, with a relatively wide distribution of financial rewards. As Dr. Sasipatch noted, “More than half of the value went to ordinary villagers participating in the tourism value chain, followed by entrepreneurs directly involved in the activities.”

Encouragingly, cultural and tourism activities in Ton Pao continued beyond the formal project period. While this continuity cannot be attributed solely to the Spirit of Ton Pao, it suggests that the broader direction of heritage-based creative development remains active within the community.

Strengthening Communal Water Management

For centuries, villagers in Northern Thailand have worked together to maintain weirs and irrigation canals to distribute water among farms and settlements. These communal networks have survived by adapting to new conditions, but their historic resilience is now challenged by climate change, which has increased the severity of droughts and floods. At the same time, urbanization, population growth, and expanding agricultural acreage have placed heightened demands on water resources for household consumption and irrigation



Map Showing the Dredging Project of Rong Sai Irrigation Canal, Moo 7, Ban Si Bun Chu – Wang Hai (Total Distance: 2,780 Meters)



Before and during dredging of the Ron Sai Irrigation Canal



After dredging of Rong Sai Irrigation Canal

Communal water management was of particiular concern to Thailand's late monarch, H.M. King Bhumibol Adulyadej (Rama IX), who, in 2012, established Utokatpat Foundation — a non-profit foundation for assisting communities in water -resource administration. Utokaput Foundation looked beyond isolated engineering solutions, adopting science and technology-based implementation to address such ecological issues as watershed forest conservation, soil management, and crop diversification — all with the aim of encouraging sustainable farming practices. For technical assistance, Utokapat Foundation relied on the Thai government's Hydro-Informatics Institute (HII), and both organizations turned to CMU for strategically evaluating the benefits of their water-resource work in Northern Thailand. In 2022, for example, HII and CMU formally agreed to cooperate in planning, implementing, and assessing programs for more effective communal water management, with an emphasis on understanding and mitigating the effects of climate change.

In 2025, CMU researchers, with funding from Utokaput Foundation, prepared a descriptive water-use database documenting successive years of communal projects across seven northern provinces, covering community networks encompassing more than 10,000 households in approximately 90 villages and settlements.The lead investigator was Assistant Professor Dr. Chitchol Phalaraksh, a CMU biologist with specializations in aquatic ecology and water-quality assessment.Three years earlier, Dr. Chitchol, with essentially the same team, had collaborated with HII and local water-user groups, to assess water-resource problems in four northern watersheds.

In addition to historical water-use documentation, the 2025 study included fieldwork to monitor several infrastructure projects and to evaluate their potential social and economic benefits. A representative project was the restoration of the Rong Sai Canal in the Phatcharatham Community in Lamphun Province. Although water resources for the community were generally sufficient under normal circumstances, aquatic plant growth and sediment obstruction in this canal were a threat to water distribution under severe drought conditions.To alleviate potential dry-season shortages, the canal was dredged for 2,780 meters. The outcome was an increase in water reserves by 4,587 cubic meters a year.The estimated social and economic returns on the initial investment were estimated, respectively, at 1.73 and 98.2%







PRME
BUSINESS EDUCATION FOR SOCIAL RESPONSIBILITY

Chiang Mai University Business School

Two decades ago, an international network of university educators and business organizations gained United Nations support for a voluntary initiative encouraging business and management schools to integrate ethics, sustainability, and social responsibility into all institutional operations. The resulting program is known as PRME – Principles for Responsible Management Education. After the UN adopted 17 Sustainable Development Goals in 2015, PRME incorporated these aspirations into its own mission. In 2025, the PRME network counted more than 800 members worldwide, including Chiang Mai University Business School (CMUBS). In placing PRME's sustainability principles at the core of its educational programs, CMUBS reinforced its commitment to CMU's overall institutional strategy of advancing the UN's sustainability agenda.











PRME
Principles for Responsible Management Education

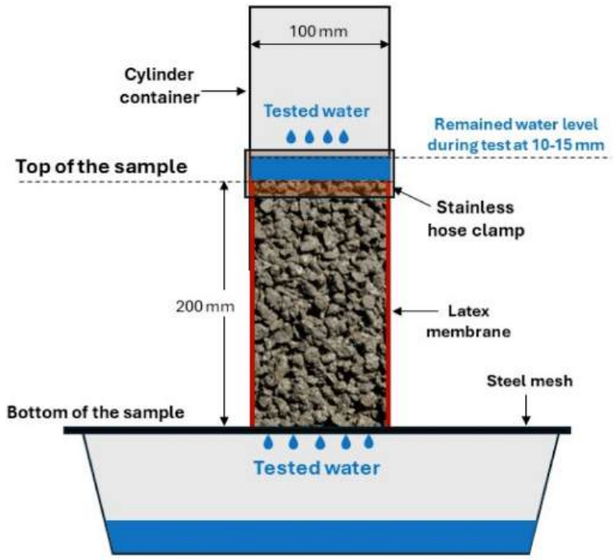
CMUBS structures its curriculum around active-learning projects designed to create a sense of social responsibility while sustainably contributing to the public good. In 2025, for example, eight teams of undergraduate finance students worked with Chiang Mai's Provincial Administrative Organisation to explore potential business models for upgrading municipal mass transit with two electric bus routes. The proposed service aimed to expand economic opportunities while reducing air pollution. That same year, a graduate-level study examined dairy farmers' relationships with a milk-buying company associated with the Lanna High-Quality Milk project — a regional initiative promoting higher production standards and better returns for farmers. Both projects connected academic knowledge with practical questions of environmental quality and economic inclusion for sustainable public benefit

CMUBS strongly encourages student participation in faculty-advised clubs that put PRME's educational principles into practice. In 2025, Startup Club members developed Work Echo, a system enabling employees to report workplace problems safely and track responses transparently. This innovation won top honors in the Labour Rights and DEI category at the NextGen BHR Youth Innovation Hackathon, held at Bangkok's United Nations Conference Centre within the UN Responsible Business and Human Rights Forum. At quite a different venue, CMUBS student volunteers renovated an old building into a library at Ban Phui School in Chiang Mai Province. Both projects encouraged students to look beyond statistical abstractions of profit, inventory, and marketability to see how their CMUBS education can directly affect the livelihoods, rights, and opportunities of actual people, emphasizing that the creation of sustainable futures is a social responsibility of business professionals.

Building Beyond Roads

The Institution of Engineering and Technology (IET) is an international organization of professional engineers and technologists with more than 150 years of heritage. In 2025, IET awarded CMU and the National University of Singapore (NUS) top honors for Sustainability and Climate Change at its annual Engineers in Society Awards ceremony. Their joint project, "Building Beyond Roads: Human-Centered Engineering for a Climate-Conscious Society," demonstrated how road construction can sustainably address climate change, waste disposal, and natural heritage conservation. CMU led the development and application of the innovative paving technology, while NUS assessed its life-cycle carbon emissions, confirming net reductions compared with conventional construction materials.

The work grew from CMU's government-funded Integrated Biomass Management Center, which opened in 2018 under the operation of the university's Energy Research and Development Institute. Designed as a national model for producing clean energy and reducing landfill use, the center primarily converted CMU's organic waste into biogas for electricity and transport fuel. It also pursued reuse of non-organic waste, including conversion of plastic residue into construction materials. Collaboration with Siam Cement Group Limited and Dow Thailand, both experienced in producing plasticized asphalt for road paving, advanced this program, with the cooperation of government highway authorities. Since 2019, more than two kilometers of plastic-modified asphalt roads have been constructed on campus, with each kilometer of 6-meter-wide road using the equivalent of 900,000 plastic bags. Subsequent research led by CMU's Associate Professor Dr. Peerapong Jitsangiam incorporated corn-waste biochar, expanding the program from plastic-modified asphalt to permeable biochar concrete.



Permeability test adopted from ASTM C1701

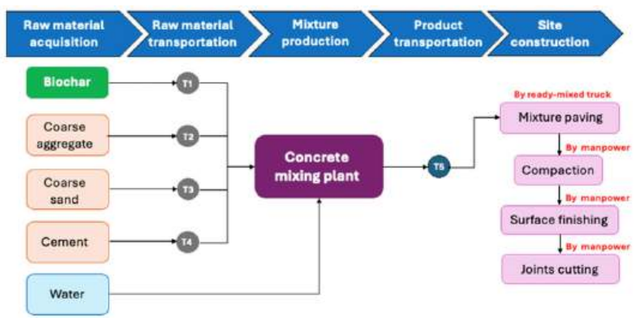


The 6,000-square-meter parking area at CMU's UNISERV Building highlighted the university's innovative road paving technology. Carbon negative in construction,the project's carbon reduction was equivalent to the annual atmospheric cleansing of 22.5 acres of forest.



These developments offered complementary environmental and climate benefits: diverting difficult-to-recycle plastics from landfills, reducing air pollution by converting agricultural waste into biochar instead of burning it in open fields, and storing carbon in biochar rather than releasing it into the atmosphere. Permeable paving also facilitated rainwater infiltration, reducing surface pooling and associated driving hazards while supplying moisture to roadside plantings. In 2024, collaboration with Chiang Mai's Provincial Administrative Organization brought porous asphalt containing plastic and biochar to the historic Chiang Mai–Lamphun road, supporting conservation of its majestic yang-na trees (Dipterocarpus alatus) planted over a century ago.

Integrating research, industrial expertise and public infrastructure, CMU's road-building program serves as a testing ground for national applications. It supports CMU's commitment to carbon neutrality by 2032 and Thailand's broader climate ambitions to target net-zero greenhouse-gas emissions by 2050.



System boundary of the parking lots construction in this project.



Assoc Prof Kua (left) and Assoc Prof Peerapong Jitsangiam (centre) receiving the award. Image courtesy of the Institution of Engineering and Technology.

Mon Tut — House, 1917



Mon Tood at bedroom window of her house

Mrs. Tut Baisukhan — Mon (great-grandmother) Tut — was a Tai Lue woman from Doi Saket District, Chiang Mai Province. Her home was built in 1917 by her husband Pho Noi Luang, using teak salvaged from an older Doi Saket house. Three elephants hauled the timber home.

After her husband died, Mon Tut remained in her home, cared for by a widowed granddaughter. At more than 100 years of age, Mon Tut still made her way about her house, passing along the side veranda to bathe on the rear terrace. But the house itself needed serious repair. No longer able to afford its upkeep, Mon Tut allowed her family to advertise its sale.

Mon Tut's home came to the attention of architect Sirichai Narumitrekhakan of CMU's Social Research Institute. Recognizing it as a rare surviving example of Tai Lue traditional construction, he agreed to buy the building and donate it to the university as an initial effort to preserve Lanna's vernacular architectural heritage. Under the purchase agreement, Mon Tut remained in her home until her death, a few days before her 107 birthday.

In 1993, the Mon Tut House was dismantled, moved, and reconstructed at its present museum site, with minor roof alterations. The following year, CMU performed the "entering the new house" ceremony to bring auspiciousness to those using the building and to dedicate merit to Mon Tut.



Tai-Lue House
- Heaun Mon Tood at Lanna Traditional House Museum, CMU



Tai-Lue House - Heaun Mon Tood at its original location
(located at Luang Nuea Village, Doi Saket District, Chiang Mai Province)

Lanna Traditional House Museum

CMU's Lanna Traditional House Museum, administered by the \university's Office for the Promotion of Arts, Culture and Creative Lanna (ACCL), preserves a major collection of Northern Thailand's vernacular architecture. Unlike venerated temples and prominent public edifices, historic wooden homes have long been vulnerable to demolition for new development. In the early 1990s, CMU began acquiring endangered buildings through purchase and donation, conserving traditional woodworking skills and the patterns of domestic life they once served. The museum's approximately 3.6-acre grounds contain 14 historic structures — residences and rice barns dating from the mid-nineteenth century to the mid-twentieth century. The assemblage represents both city households and farming families from Chiang Mai and surrounding districts. Generally dismantled, relocated, and reassembled according to traditional construction methods, the houses retain customary arrangements of sleeping, cooking, and shared living spaces. Most stand on stilts beneath gabled roofs, with ground-level space used for keeping livestock and storage

ACCL has expanded the museum's role beyond preservation. Visitors can experience Lanna culture through cooking classes and practical instruction in traditional crafts, while festivals and fairs bring artisans and their work into the museum grounds. Sessions for older adults, organized with CMU's Department of Rehabilitation Medicine, draw on Lanna instrumental music to encourage relaxation and socializing.Together, these activities make the museum a place for lifelong learning, where visitors explore Lanna heritage through architecture, educational exhibitry, and engagement with regional cultural traditions.

The museum recorded approximately 11,000 visits in the 2025 fiscal year. To accommodate wider participation and enrich the visitor experience, ACCL began construction in 2024–2025 on expanded instruction, activity, and exhibition spaces, as well as a new gift shop showcasing traditional Lanna crafts and university students' creations. This integration of conservation, learning, and cultural tourism received national recognition in 2025, when the Tourism Authority of Thailand bestowed multiple honors on the museum with its Hall of Fame Award, Thailand Tourism Excellence Award, and Thailand Tourism Sustainability Award.











From Preservation to Participation —



15th Thailand TOURISM AWARDS 2025

HALL OF FAME AWARD

ATTRACTION : RECREATION

Thailand Tourism Excellence & Sustainability Awards

















REFERENCES

“Have You Eaten Rice Yet?”

https://lanna-rice.cmu.ac.th/uploads/oit/oit_1782735843_8c1b93869f8a.pdf ; in Thai.
https://qascf.com/index.php/qas/article/download/699/719/2490

“Yes, We Have Eaten Rice”

https://www.facebook.com/yontpholdee/posts/1435020451560663/ ; in Thai.
https://www.thaipost.net/public-relations-news/541530/ ; in Thai.
https://epg.science.cmu.ac.th/ejournal/journal-detail.php?id=11845

Lan Na And Beyond

https://www.soc.cmu.ac.th/images/lanna_and_beyond/Lan-Na-and-Beyond_Book-of-Abstracts.pdf

Decoding Diversity For Better Health

https://pubmed.ncbi.nlm.nih.gov/40369069/

The Richness and Vulnerability of Traditional Medicinal Knowledge

https://doi.org/10.1016/j.jep.2017.12.003
https://doi.org/10.1002/pan3.10763

Melioidosis– Unmasking The Great Imitator

https://pmc.ncbi.nlm.nih.gov/articles/PMC12015870/
https://doi.org/10.3390/pathogens13110926

Spirit of TON PAO -Reviving Lanna Craft Through Academic Engagement

Spirit of TONPAO: Crafting a Creative Impact Journey, Political Science Department,
Chiang Mai University, 2025; in Thai.

Strengthening Communal Water Management

https://so04.tci-thaijo.org/index.php/sjij/article/download/257710/175054/1016332
Chiang Mai University, Project for the Evaluation and Monitoring of the Implementation of
the Community Water Resource Management Project in Accordance with the Royal Initiative,
Northern Region, 2025; in Thai.

PRME-Business Education for Social Responsibility

https://www.cmubs.cmu.ac.th/en/
https://www.cmubs.cmu.ac.th/wp-content/uploads/2025/04/O7-2_ActionPlan268.pdf ; in Thai.

Building Beyond Roads

https://www.theiet.org/impact-society/awards-prizes-and-scholarships/engineers-in-society-awards/2025-winners-and-finalists
https://www.cmu.ac.th/en/article/d2af115b-0e9d-4e3d-9349-cf326b0c57fa
https://www.sciencedirect.com/science/article/pii/S2666165925001358?via%3Dihub

Lanna Traditional House Museum

https://accl.cmu.ac.th/EN/Museum
Office for the Promotion of Arts, Culture and Creative Lanna
Chiang Mai University, Annual Report, 2025; in Thai.

EDITORIAL

Advisor
Professor Pongruk Sribanditmongkol M.D., Ph.D.
President, Chiang Mai University

Editorial Director
Associate Professor Dr. Pradthana Jaipong
Director, Office of Educational Quality Development (EQD),
Chiang Mai University

Editorial Team
Jeffrey A. Hess
Lead Writer and Content Editor

Associate Professor Prasert Rerkkriangkrai
Vice President, Chiang Mai University

Assistant Professor Dr. Khongphu Nimanandh
Dean, Chiang Mai University Business School (CMUBS)

Associate Professor Dr. Wasan Panyagaew
Dean, Faculty of Social Sciences

Dr. Korawan Sangkakorn
Director, Office for the Promotion of Arts, Culture
and Creative Lanna (ACCL)

Associate Professor Dr. Angkhana Inta
Ethnobotany and Northern Thai Flora Laboratory,
Faculty of Science

Assistant Professor Dr. Chitchol Phalaraksh
Aquatic Ecology and Water Quality, Faculty of Science

Associate Professor Dr. Jatupol Kampuansai
Population Genetics and Molecular Anthropology Laboratory,
Faculty of Science

Dr. Sasipatch Chaisiribodin
Faculty of Political Science and Public Administration

Generative AI Tools
Editing and Proofreading Support

Design and Production
Chiang Mai Graphic Design Co., Ltd.

Creative Advisory
**Center for the Promotion of Art, Culture, and Creative Lanna,
Chiang Mai University**

The editorial team expresses gratitude to all members
of the Chiang Mai University community whose contributions
made this publication possible. Generative AI tools assisted
in reviewing, editing, and proofreading; all content was written
and verified by the editorial team.

LANNA ALIVE