

香川大学
インターナショナルオフィスジャーナル
第13号



Journal of Kagawa University International Office
Vol. 13



KAGAWA
UNIVERSITY

香 川 大 学
インターナショナルオフィスジャーナル
第 13 号

1st Trilateral Symposium on SDGs 特集号

チェンマイ大学 (タイ国)

国立嘉義大学 (台湾)

香川大学 (日本)

2021年8月31日～9月22日

香川大学主催



Journal of Kagawa University International Office
Vol. 13

Special issue on 1st Trilateral Symposium on SDGs

Chiang Mai University (Thailand)

National Chiayi University (Taiwan)

Kagawa University (Japan)

August 31～September 22, 2021

Hosted by Kagawa University



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International Relations Division, Mrs. Sansanee Srinorakut

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Vice-President, Professor Chishih Chu
Vice-President, Professor Der-Ching Yang
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Dean of Teachers College, Professor Ming-Chung Chen (July 2021-)
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Dean of College of Management, Professor Hung-Wen Lee
Dean of College of Agriculture, Professor Han Chien Lin (August 2018 - July 2021)
Dean of College of Agriculture, Professor Shen, Rong-Show (July 2021-)
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Dean of College of Life Sciences, Professor Ruey-Shyang Chen
Dean of College of Veterinary Medicine, Professor Ming-Huang Chang
Dean of International Office, Professor Hung-Wen Lee
Director of Division of International Cooperation of International Office, Assistant Professor Angel Chen
Secretary, Division of International Cooperation of International Office, Ms. Chiaying Ling
Coordinator, Division of International Cooperation of International Office, Ms. Yo-Chi Tsai

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Dean of Faculty of Medicine, Professor Natsuo Ueda, M.D., Ph.D.
Dean of Faculty of Law, Professor Yasushi Mino
Faculty of Education, Professor Yumiko Takagi, Ph.D.
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Faculty of Engineering and Design, Professor Masahide Ishizuka, Ph.D.
Faculty of Agriculture, Professor Osamu Kawamura, Ph.D.
International Office, Professor Yoshihisa Onoe
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Faculty of Agriculture, Associate Professor Lutes Peter Gerald
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International Office, Adjunct Lecturer Chew Hui Yan, Ph.D.
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Professor Emeritus Yoshiro Imai, Ph.D.
Manager, Administrative Group of International Office, Ms. Naoko Nakagawa
Deputy Manager, Administrative Group of International Office, Ms. Kayo Shinohara
Administrative Group of International Office, Ms. Natsuki Shirakawa

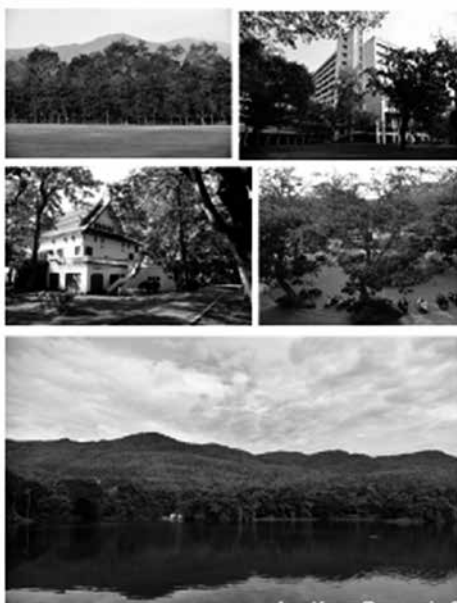
Introduction of three universities



Chiang Mai University



Introduction of Chiang Mai University



Chiang Mai University (CMU)

CMU was founded in 1964 as the first higher education institution outside Bangkok. Being a comprehensive university, it has been recognized in the fields of medicine, science, engineering, agriculture, humanities, and social sciences. CMU ranks 3rd in the country and 102nd in 2021 QS Asian University Ranking.

CMU Profile:

- 27 faculties and colleges and 103 departments
- 33,836 students
- 28,511 undergraduates
- 5,325 postgraduates (4,088 MS and 1,237 PhD)
- 11,482 staff (2,510 academic and 8,972 support staff)



Comprehensive University:
21 Faculties, 3 Colleges, 2 Institutes, and 1 Graduate School



Health Sciences (7)

- Associated Medical Sciences
- Dentistry
- Medicine
- Nursing
- Pharmacy
- Public Health
- Veterinary Medicine

Science and Technology (9)

- Agriculture
- Agro-Industry
- Architecture
- Engineering
- Science
- College of Arts, Media and Technology
- College of Marine Studies and Management
- International College of Digital Innovation
- Institute of Biomedical Engineering

Social Sciences and Humanities (10)

- Business Administration
- Economics
- Education
- Fine Arts
- Humanities
- Laws
- Mass Communication
- Political Science and Public Administration
- Social Sciences
- Institute of Public Policy



Number of International Students (Academic Year 2020)

- 1,550 of Total International Students
- 312 of Short-Course Students
- 1,238 of Degree - Program Students (BA 636, MA 388, Doctoral 214)
- 412 of Exchange Students
- 50 more than 50 nationalities



Chiang Mai University
A Leading University Committed to Social Responsibility and Sustainable Development

THE Impact Rankings 2021

Overview Chiang Mai University

OVERALL RANK	101-200 out of 1115 institutions
OVERALL SCORE	78.6 out of 100

No.1 in Thailand to 3 SDGs

5 GENDER EQUALITY 54 th of the World SDG 5 Gender Equality	13 CLIMATE ACTION 101 th -200 th of the World SDG 13 Climate Action	16 PEACE, JUSTICE AND STRONG INSTITUTIONS 201 th -300 th of the World SDG 16 Peace, Justice and Strong Institutions
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National Chiayi University



National university

Founded in 1919 and merged in 2000

President: Chyung Ay, PhD

Location: Chiayi City, Taiwan

Number of students

Undergraduate students: 9,275

Graduate students: 3,101

International students: 305

Colleges (7) :

Teachers College

College of Humanities and Arts

College of Management

College of Science and Engineering

College of Agriculture

College of Life Sciences

College of Veterinary Medicine

Partner Universities: 116

University ranking:

THE World University Ranking 2022: 1201+

THE University Impact Ranking 2021 (Asia): 401+

THE World University Ranking 2021 (Taiwan): 20



Introduction of National Chiayi University

7 Colleges welcome students





Kagawa University



National university

Founded in 1874 and chartered in 1949

President: Yoshiyuki Kakehi, MD, PhD

Location: Takamatsu, Kagawa, Japan

Number of students

Undergraduate students: 5631

Graduate students: 689

International students: 120

Faculties (6) :

Faculty of Agriculture

Faculty of Economics

Faculty of Education

Faculty of Engineering and Design

Faculty of Law

Faculty of Medicine

Graduate Schools (7)

Graduate School of Agriculture

Graduate School of Economics*

Graduate School of Education*

Graduate School of Engineering*

Graduate School of Law

Graduate School of Management

Graduate School of Medicine

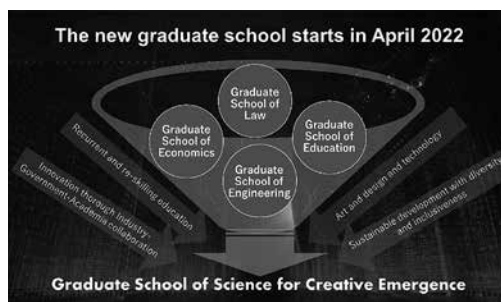
Partner Universities: 103

University ranking

THE World University Ranking 2022: 1201+

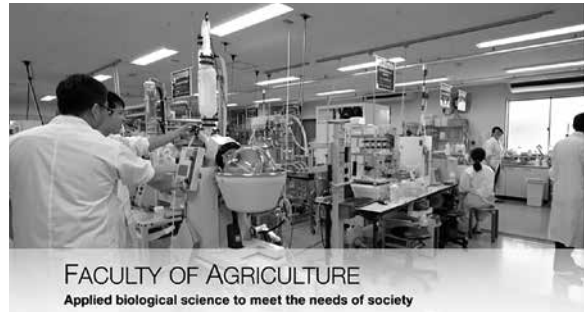
THE University Impact Ranking 2021: 601-800

THE World University Ranking 2021 (Japanese): 96



Introduction of Kagawa University

6 Faculties and 7 graduate schools welcome students



Kagawa is located in Shikoku Island where beautiful nature and traditions are well preserved.



Preface

History of the three-university collaboration

Chiang Mai University (Kingdom of Thailand) signed an MOU with Kagawa University in 1990. That occasion placed Chiang Mai University to be one of the very first universities to sign an MOU with Kagawa University. Since then, both universities have been enjoying friendly relationship for more than 3 decades, with almost all faculties and centers engaging each other via exchange programs. In 2007, both universities decided to hold a joint symposium with each partner taking turns to play host. Seven joint symposiums were held, with the latest one being hosted by Chiang Mai University in 2018.

Meanwhile, National Chiayi University (Taiwan) signed a similar MOU with Kagawa University in 2013. As with Chiang Mai University, multiple faculties and centers from both universities have conducted collaborative activities. A joint workshop between the two universities took off in 2012, and since then, seven such workshops had been held, the latest one being hosted by National Chiayi University in 2019.

Both the joint symposium and the joint workshop have achieved many noteworthy accomplishments. However, to bring the cooperation and collaboration to a higher level, the three universities decided to combine resources to focus on one single symposium whereby all three partners can participate. The advantages were obvious in that, a single symposium can include a wider spectrum of academic fields that is interdisciplinary in scope, thereby opening up the opportunity for more researchers and students to participate in.

Furthermore, combining two independent events into a single one seemed to be a natural manifestation of the mutually friendly and productive collaboration that has been enjoyed by the three universities over the many decades.

Year	CMU-KU Joint Symposium	NCYU-KU International Workshop	Trilateral Symposium on SDGs
2007	1st (Chiang Mai)		
2008	2nd (Kagawa)		
2009			
2010	3rd (Chiang Mai)		
2011			
2012	4th (Kagawa)	1st (Chiayi)	
2013		2nd (Kagawa)	
2014	5th (Chiang Mai)	3rd (Chiayi)	
2015		4th (Kagawa)	
2016	6th (Kagawa)	5th (Chiayi)	
2017		6th (Kagawa)	
2018	7th (Chiang Mai)		
2019		7th (Chiayi)	
2020	8th (Kagawa) postponed		
2021	8th (Kagawa)	8th (Kagawa)	1st (Kagawa) online
2022			↓
2023			2nd (Kagawa)

The decision to name the combined entity "Trilateral Symposium on SDGs" reflects the deep commitment of the three universities on SDGs research and education, and their will to continue doing so.

The 1st Trilateral Symposium on SDGs was initially planned to be held as a face-to-face symposium in Kagawa University in the summer of 2020. Due to the global pandemic of COVID-19, it became difficult to hold the event in person. The event was postponed to April 2021. However, COVID-19 was still around, and instead of postponing it another time, the three universities decided to hold the symposium online.

Kagawa University had the honor of hosting the 1st Trilateral Symposium on SDGs from August 31, 2021 to September 22, 2021. This took the form of several distinct online sessions. The sessions were 1. Main Session (September 1, 2021) , Sustainability & Food Session (August 31, 2021) , Sustainability & Technology Session (September 1, 2021) , Sustainability & Society Session (September 2, 2021) , Sustainability & Health Session (September 6, 2021) and Student Session (September 1, 8, 22, 2021) . All in all, more than 400 delegates participated in the sessions.

The Main session was held on September 1 from 15:00 to 17:00 and was attended by about 120 faculty members and students. In the first part, the three university presidents delivered their opening remarks and greetings. Following this, a video introduction of each university was shown. The Memorandum of Cooperation was signed, signaling a promise by the three universities to further cooperate and strengthen the mutual relationships, and to hold the symposium from the next year onward.

In the discussion session during the second part, videos introducing research related to SDGs of the three universities were shown, and lively discussions were held by the vice-presidents in charge of international affairs. Through this symposium, the three partners expect to see continuous development of collaborative research projects, especially among young researchers.

Meanwhile, a total of about 200 faculty members and students participated in the four satellite sessions: "Sustainability & Food Session", "Sustainability & Technology Session", "Sustainability & Society Session" and "Sustainability & Health Session". One commendable result is that some concrete joint research buds have already emerged from the presentations and discussions that followed.

A total of 65 students, 16 to 25 students from each university, together with 10 plus supervisors and coordinators participated in the Student Session. The students were divided into five teams. The student session was in turn carried out via three sub-sessions. The first sub-session on September 1 took off with a 'Getting to know you' exchange among the students, followed by the selection of a theme for presentation. The focus of the second sub-session on September 8 was the discussion on the selected theme and preparation for presentation. In the third sub-session on September 22 the five groups gave their final presentations, and they all performed very well.

We are happy to declare that the 1st Trilateral Symposium on SDGs was successfully held online with more than 420 participants. We have fully fulfilled the aim of creating opportunities for faculty members, researchers, and students, and creating concrete collaboration projects in both education and research among the three universities. We have decided to publish a report on the 1st Trilateral Symposium on SDGs as a special issue of the Journal of Kagawa University International Office (ISSN 1884-8745) . This shall be in both print and electronic format and will serve not only as a record but also as a reference for the 2nd Trilateral Symposium on SDGs which is slated to be held 'face-to-face' in Kagawa in the summer of 2023 (We initially planned to hold in 2022, however we have decided to postpone one year due to COVID-19 outbreak).

Last but not least, the organizing committee of the 1st Trilateral Symposium on SDGs would like to express our sincere appreciation to all parties from all three universities who together prepared this fruitful symposium.

Overall program

Overall program and number of participants of

1st Trilateral Symposium on SDGs

August 31 ~ September 22, 2021

Hosted by Kagawa University

Session	Date	Participants
Main Session	September 1 (Wed) 2021	120
Sustainability & Food Session	August 31 (Tue) 2021	65
Sustainability & Technology Session	September 1 (Wed) 2021	30
Sustainability & Society Session	September 2 (Thu) 2021	50
Sustainability & Health Session	September 6 (Mon) 2021	70
Student Session	September 1 (Wed) 2021 September 8 (Wed) 2021 September 22 (Wed) 2021	85

President messages



President of Chiang Mai University Clinical Professor Niwes Nantachit, M.D.

On behalf of Chiang Mai University, it is my great honor to welcome everyone, to The Trilateral Symposium on SDGs, together with Kagawa University and National Chiayi University.

Chiang Mai University is proud to have established a long and progressive relationship with both universities, already 10 years with National Chiayi University and over 30 years with Kagawa University. Over the years Chiang Mai University has successfully academically cooperated with each university individually and it is thus a pleasure to be able to bring all our universities together today and enhance our working relationship.

In 2015, United Nations member states adopted the 2030 Agenda for Sustainable Development. The Agenda, to be achieved within 15 years, comprises of 17 Sustainable Development Goals, or SDGs, with 169 specific targets and 230 progress indicators. The SDGs stress the importance of balancing the three dimensions of sustainable development, economic, social and environmental, in an integrated and inclusive manner so that no-one is left behind.

Thailand has its own development framework that is being used to achieve these Sustainable Development Goals, called the Sufficiency Economy Philosophy. It relies on wisdom and integrity, as well as utilizing the principles of moderation, reasonableness and prudence, and was conceived by His Majesty/ the Late King Bhumibol Adulyadej. The focus of this Sufficiency Economy Philosophy is on sustainability and it has been adopted as the core principle of Thailand's National Economic and Social Development Plan/ since 2002.

Chiang Mai University is Thailand's first provincial university and was established in accordance with the government's policy. Its objective is to provide the region with academic and occupational education and research and has adopted these SDGs as an integral part of its own development plan.

May I take this moment to convey my sincere appreciation to all of you for attending the symposium today and to thank the Organizing Committee for their hard work in making this symposium possible.

Finally, the sharing of knowledge and skills by participants in today's symposium, I am confident, will bring fresh insights and directions whilst strengthening our relations and collaborations.

Thank you.





President of National Chiayi University Professor Chyung Ay

Good afternoon President Kakehi Yoshiyuki, President Niwes Nantachit, and all the distinguished guests from Kagawa University and Chiang Mai University! My colleagues and I feel very much honored to participate in today's event. I believe this is a very special day for us to set a significant milestone for future collaboration among the three Universities.



The memorandum of cooperation for joint symposia we signed today also commits us to work together more closely towards our common goal, the pursuit of the internationalization of education. NCYU will continuously pursue significant activities, such as the promotion of educational exchange and research cooperation opportunities with both Kagawa University and Chiang Mai University. We also look forward to discussing with you today about all kinds of possibility our faculty and students can contribute to SDGs.

I would also like to take this opportunity to assure you that NCYU will do our best to put our cooperation projects into practice. Moreover, I am more than confident that through our efforts and commitment, we will not only develop strong relationships and friendships among the three Universities but also achieve great goals in boosting better education.

Thank you very much!



President of Kagawa University
Professor Yoshiyuki Kakehi, M.D., Ph.D.

Good afternoon. Professor Niwes Nantachit, President, Chiang Mai University, Professor Chyung Ay, President, National Chiayi University, distinguished guests, professors, staff and students.

On behalf of Kagawa University, I would like to thank all of you who have gathered here today to celebrate the opening of the 1st Trilateral Symposium on Sustainable Development Goals.



Since early spring of the last year, we have been struggling with COVID-19 and we are still in the mid of the pandemic. Under these tough circumstances, however, we are very happy to hold this symposium. I would like to express my sincere appreciation for such a great collaboration of both Chiang Mai University and National Chiayi University. I believe that this online symposium will certainly lead to the 2nd Trilateral Symposium next year which I hope it will be held in a face-to-face fashion. I and Kagawa University staffs are very much looking forward to welcoming you here in Kagawa next year.

Let's look at the history of our partnership. Chiang Mai University and Kagawa University concluded our MOU in 1990 and have, in turn, hosted seven joint symposia since 2007. National Chiayi University and Kagawa University concluded our MOU in 2013 and also have hosted seven joint workshops since 2012.

Based upon the history of partnership and friendship between Kagawa and Chiang Mai Universities and Kagawa and National Chiayi Universities, we at last can hold the online Trilateral Symposium this time. It is a great honor for us Kagawa University to play a role for organizing both the 1st trilateral academic meeting and the 2nd face to face symposium next year.

Shortly, we will sign a Memorandum of Cooperation, which is an expression of our continued commitment to move forward and further strengthen our relationship. We have conducted many activities with both Chiang Mai University and National Chiayi University, and we can continue, and expand, these activities, especially in the area of research collaboration and student mobility with a focus on SGDs.

In today's main session, we all have frank discussions on how to move forward together, and in the satellite sessions, our young researchers will share their recent activities. I greatly expect hot discussions among young researchers. I hope that this online symposium encourages our younger generation and becomes a good opportunity to deepen their friendship.

Once again, I would like to express my sincere appreciation to all the members and staffs participating from three universities for such a wonderful preparation of this symposium. I hope all of you will enjoy this online symposium. Your fruitful discussion will certainly promote our friendship. Thank you for your attention.

Memorandum of Cooperation for Trilateral Symposium on SDGs

between

Chiang Mai University, Chiang Mai, Thailand

National Chiayi University, Chiayi, Taiwan

and

Kagawa University, Takamatsu, Japan

With the objective of strengthening their mutual cooperation, Chiang Mai University (referred to as “CMU”), National Chiayi University (referred to as “NCYU”), and Kagawa University (referred to as “KU”) have concluded the following specific Memorandum of Cooperation (MOC) for cooperation in joint symposia, research and student mobility:

Section 1: Areas for Cooperation

Cooperation between the three universities is intended to support the continuation of the special relationship between the three universities. The three universities acknowledge the special shared relationship and agree to promote and encourage educational and research activities. This cooperation includes, but is not limited to, holding joint symposia to be hosted by the three universities in turn, conducting activities to support and develop the joint symposia, and promoting the development of deeper research and education activities.

Section 2: Forms of Cooperation

The three universities state their intention, as circumstances permit, to:

1. Hold a joint symposium every 2 years to highlight research, and joint activities,
2. Organize of the symposia, in turn, at each university with the 2022 Trilateral Symposium on SDGs organized by KU, the 2024 Trilateral Symposium on SDGs organized by CMU, and the 2026 Trilateral Symposium on SDGs organized by NCYU,
3. Consider the symposia as drivers for research collaboration and student mobility,
4. Utilize the symposia to develop deeper research collaboration, to increase student mobility and to foster new collaborative activities, and
5. Conduct other initiatives or activities to further the special shared relationships of the three universities.

Section 3: Validity of the Memorandum

1. This MOC is effective from the date of the last signature of the signing officers of the three universities and shall remain in effect for until the completion of one (1) cycle of symposia organized by the three universities in turn, as described in Sections 2-1 & 2-2 above, at which time the MOC may be extended.
2. This MOC may be terminated by any of the three universities by officially notifying the other universities of its intent to do so in writing six (6) months in advance.
3. This MOC may be amended at any time by mutual written consent of the three universities.
4. This MOC is automatically renewed unless any of the three universities has indicated the intention to not to renew in writing six (6) months in advance.

Section 4: General

All research and related activities conducted pursuant to this MOC should be conducted in accordance with the laws and regulations appropriate to each institution. This MOC does not create any legally binding obligation on the three universities.

Signatories

Chiang Mai University



Clinical Prof. Niwes
Nantachit
President

N. Nantachit

Date: 1 Sep, 2021

National Chiayi University



Prof. Chyung Ay
President

Chyung Ay

Date: 1. Sep. 2021

Kagawa University



Prof. Kakehi Yoshiyuki
President

Yoshiyuki Kakehi

Date: 1. Sep, 2021

【 Main Session 】



Main Session

Program

Event	Time
Welcome of the attendees	15:00-15:05
President opening addresses <ul style="list-style-type: none">➤ Clinical Prof. Niwes Nantachit President, Chiang Mai University➤ Prof. Chyung Ay President, National Chiayi University➤ Prof. Yoshiyuki Kakehi President, Kagawa University	15:05-15:20
Introduction of 3 universities (Video movies)	15:20-15:30
Signing ceremony: Memorandum of Cooperation	15:30-15:45
Discussion session <ul style="list-style-type: none">➤ PART 1: Prospective of Trilateral Symposium on SDGs➤ PART 2: Introduction of potential collaboration areas by research experts from each university (Video movies)➤ PART 3: Discussion	15:45-16:55
Closing remarks by the host university	16:55-17:00

MC: Associate Professor Lutes Peter Gerald, Faculty of Agriculture, Kagawa University

Adjunct Instructor Chew Hui Yan, International Office, Kagawa University

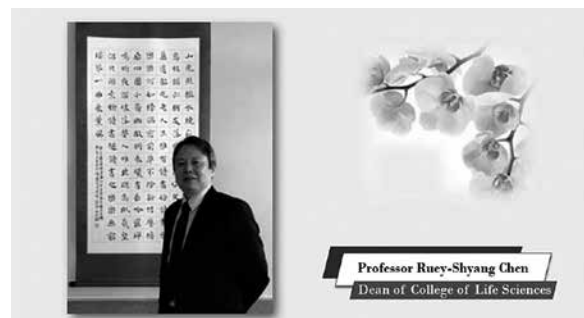
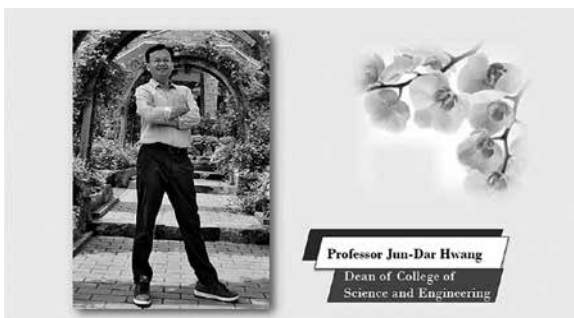
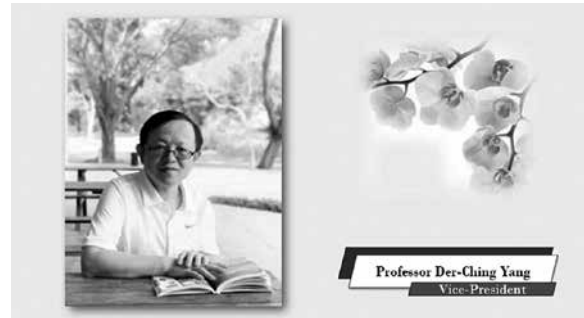
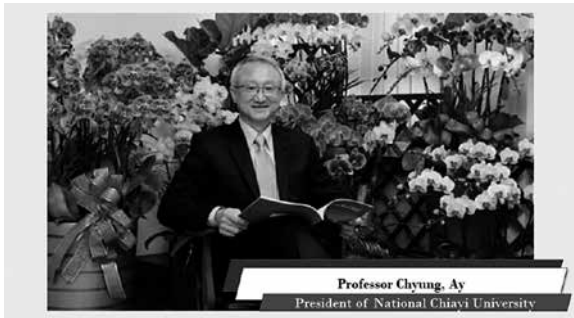
Mode: Online

Delegates

Chiang Mai University



National Chiayi University



Kagawa University



Summary of the main session

Session Committee

Vice-President, Professor Masaaki Tokuda

Associate Professor Lutes Peter Gerald

Adjunct Lecturer Chew Hui Yan

Ms. Naoko Nakagawa

Ms. Kayo Shinohara

Ms. Natsuki Shirakawa

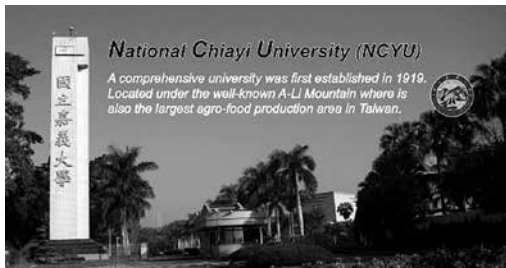
Outline

The main session was hosted online (ZOOM) on September 1, 2021, at 15:00 (Japan Standard Time) . The main session was attended by the executive leadership, faculty, students, and staff of the three universities. The session was hosted and moderated by Associate Professor Peter Lutes of Kagawa University.

The main session featured opening addresses by the presidents of the three participating universities, Clinical Professor Niwes Nantachit, President of Chiang Mai University, Professor Chyung Ay, President of National Chiayi University and Professor Yoshiyuki Kakehi, President of Kagawa University (in order of appearance). Following this, the three presidents signed a Memorandum of Cooperation which is an expression of our continued commitment to move forward and further strengthen our relationship.



An overview of each university was presented by video, followed by an outline of recent research and education accomplishments by Professor Der-Ching Yang, Vice-President of National Chiayi University, Associate Professor Rome Chiranukrom, Vice-President of Chiang



Mai University, Associate Professor Sampan Singharajwarapan, Vice-President of Chiang Mai University, Professor Ikuo Kataoka, Vice-President of Kagawa University and Professor Masaaki Tokuda, Vice-President of Kagawa University (in order of appearance) . Each university explained the activities and challenges toward the fulfillment of SDGs. We learned that each university has strengths in different fields of 17 area of SDGs. For example, Chiang Mai University focuses more on SDG 2, SDG 3, SDG 7, SDG 9 and SDG 13, National Chiayi University on SDG 2, SDG 3, SDG 4, SDG 11, SDG 12, SDG 13 and SDG 15, and Kagawa University on SDG 2, SDG 3, SDG 4, SDG 5, SDG 11 and SDG 13. Of course, SDG 17 is the essential goal which is linked with all of the other SDGs. We all feel that it is worthwhile to learn from each other, share with each other and work together for better results.

SUSTAINABLE DEVELOPMENT GOALS



An open discussion focusing on how the three universities could work together on SDGs was led by Professor Masaaki Tokuda, Vice-President of Kagawa University. There was a strong consensus to develop a greater number of international collaborations in Research and Education that can also contribute to society at both regional and global levels. Initiatives such as a new collaboration networks and “Trilateral Student Mobility Program” were discussed. To have some educational collaboration for students which deal with SDGs shall be discussed in the near future. The three universities agreed in principle to start collaboration on SDGs both in education and research and confirmed that they shall immediately start concrete projects together. That way, the three universities can show the merits of the collaboration and also may uncover some challenges underling collaboration.

One possible area is in agriculture with the key word of “food”. Professor Osamu Kawamura, the organizer of the “Sustainability and Food”, reported that one collaboration project on broiler chickens is now under discussion. Both Chiang Mai University and National Chiayi University proposed the functional food and health are possible collaboration areas.

The main session was closed by Professor Masaaki Tokuda, Vice-President of Kagawa University by drawing attention to the next Trilateral Symposium as an excellent venue for highlighting preliminary cooperative research.

SDGs-related activities of Chiang Mai University



SDGs-related activities of National Chiayi University



SDGs-related activities of Kagawa University



【 Sustainability & Food Session 】



Sustainability & Food Session

Organizing Committee

Assoc. Prof. Dr. Yuthana Phimolsiripol, Faculty of Agro-Industry, Chiang Mai University
(Head of Session)

Assoc. Prof. Dr. Chien-Jui Huang Faculty of Agriculture, National Chiayi University
(Head of Session)

Prof. Dr. Osamu Kawamura, Faculty of Agriculture, Kagawa University (Head of
Session)

Chairpersons

Assoc. Prof. Dr. Yuthana Phimolsiripol, Faculty of Agro-Industry, Chiang Mai University

Assoc. Prof. Dr. Chien-Jui Huang, Faculty of Agriculture, National Chiayi University

Prof. Dr. Osamu Kawamura, Faculty of Agriculture, Kagawa University

Program

Date: August 31, 2021 Time: 14:00 – 17:20 (Japan Standard Time)

JST	Event	Presenter
14:00	Opening	Opening remarks Prof. Kazuya Akimitsu, Vice Dean, Faculty of Agriculture, KU Meet the organizers •Assoc. Prof. Yuthana Phimolsiripol, Faculty of Agro-Industry, CMU •Assoc. Prof. Chien-Jui Huang, Faculty of Agriculture, NCYU •Prof. Osamu Kawamura, Faculty of Agriculture, KU MC : Assoc. Prof. Peter Lutes, Faculty of Agriculture, KU
14:10	CMU 1	Asst. Prof. Wongchai Anupong Technical Efficiency of Sustainable Broiler Production in Northern Thailand.
14:30	NCYU 1	Prof. Jyh-Mirn Lai Using Hazard Analysis and Critical Control Point to Reduce the Occurrence of Cattle Mastitis in a Farm.
14:50	KU 1	Asst. Prof. Yusuke Hanaki Synthesis and Biological Evaluation of Oscillatoxins and Aplysiatoxins.
15:10	CMU 2	Asst. Prof. Phumon Sookwong Utilization of Functional Phytochemicals in Rice Seeds for Health Promotion.

15:30	NCYU 2	Prof. Cheng-Kuang Hsu UV-denatured Whey Protein Enhances the Photo-stability of Anthocyanins in Black Soybean Milk Drinks.
15:50	KU 2	Asst. Prof. Lingbing Kong Antibacterials Targeting the Exporters of Extracellular Polysaccharides.
16:10	CMU 3	Dr. Siraphat Taesuwan Human Evidence for Choline Intake Promotion Across Lifespan.
16:30	NCYU 3	Asst. Prof. Yen-Po Lin We Should NOT Fall: Our Battles to the Fall Armyworm, <i>Spodoptera frugiperda</i> (J.E. Smith, 1797).
16:50	KU 3	Asst. Prof. Keisuke Mizuta Development of Cultivating Methods to Achieve High Yield and Quality in Wheat for Bread and Durum Wheat.
17:10	Closing	Comments from the organizers <ul style="list-style-type: none"> •Assoc. Prof. Yuthana Phimolsiripol, Faculty of Agro-Industry, CMU •Assoc. Prof. Chien-Jui Huang, Faculty of Agriculture, NCYU •Prof. Osamu Kawamura, Faculty of Agriculture, KU
17:20	End	

Summary of the session

This session was held online (ZOOM) on August 31, 2021 at 14:00 (Japan standard time). The host was Prof. Osamu Kawamura of Kagawa University, and the session was moderated by Assoc. Prof. Peter Lutes. The coordinators were Assoc. Prof. Dr. Yuthana Phimolsiripol from Chiang Mai University, Assoc. Prof. Dr. Chien-Jui Huang from National Chiayi University, and Prof. Osamu Kawamura from Kagawa University, who selected the presenters and made various adjustments. The number of participants was 63 (14 students), including 30 from Chiang Mai University (2 internal students), 9 from National Chiayi University (4 students), and 24 from Kagawa University (8 students). A total of 9 young researchers, 3 from each university, gave a 15-minute presentation and a 5-minute question-and-answer session. There were questions and comments for all the presentations, and it was considered that research exchanges were generally active. Assoc. Prof. Dr. Y. Matsumoto and Asst. Prof. Dr. L. Kong at Kagawa University were selected for the 2021 International Joint Research Assistance Project as a result of the exchange at this session. It is expected that international joint research will become more active in the future.

Chairperson comments

Assoc. Prof. Dr. Yuthana Phimolsiripol, Faculty of Agro-Industry, Chiang Mai University

The symposium was a great opportunity of the three universities to engage in strong

collaboration in the future research related to Food and Sustainability. All speakers from the three universities had done good presentations and may have a good chance to connect by area of research. Apart from research activities, the symposium has worked as a platform for researchers to connect by area of research, staff and students to connect by cultural exchange, as well as academic exchange by co-supervision of thesis and so on. In addition, we have further connected in the project of alternative protein by Dr. Yoshiki and I believe it will be a fruitful collaboration. I would like to express my sincere thanks to the team of Kagawa University for the hard work in organizing this joint symposium. Special thanks also go to Dr. Peter Lutes for his well moderation. I look forward to seeing you all in the near future.

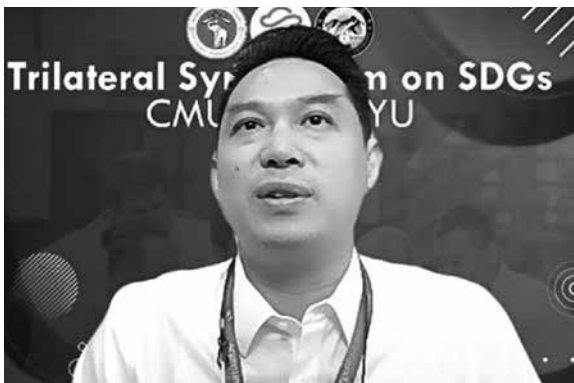
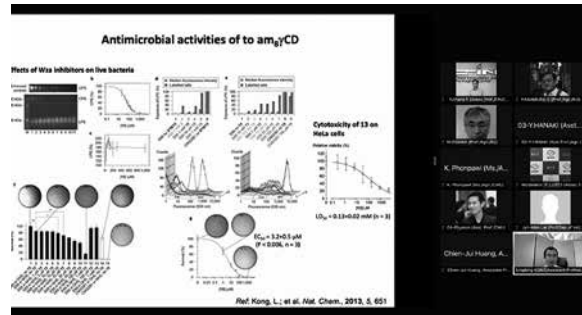
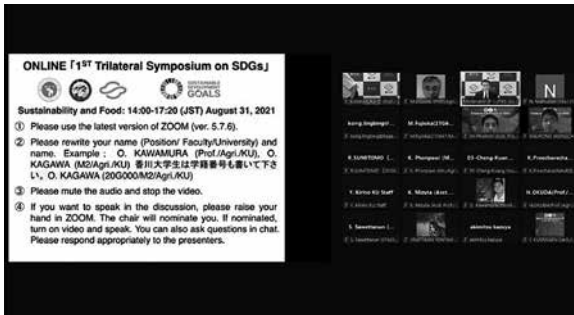
Assoc. Prof. Dr. Chien-Jui Huang, Faculty of Agriculture, National Chiayi University

This meaningful trilateral symposium was held jointly by KU, NCYU, and CMU. We had been eager to have a face-to-face symposium at KU since 2020. However, the virtual symposium was a nice alternative way of meeting under the severe threat of COVID-19 pandemic. Although KU had a very short time for organizing the symposium, it was very successful as there were 63 people participated. Many interesting ideas were shared during the symposium, and I believe this symposium must be a start of future cross-field/cross-university researches. At least, Prof. Kong at KU and I started to initiate an intriguing research. We are looking forward to a face-to-face symposium at KU in the summer, 2022 as planned to strengthen the collaboration among three universities. If there is no good solution for COVID-19 for next few years, it will be nice to hold online symposiums again to maintain the relationship among three universities.

Prof. Dr. Osamu Kawamura, Faculty of Agriculture, Kagawa University

The symposium was held jointly by the three universities for the first time. There were more participants than expected and active discussions were held. We couldn't do it face-to-face due to the COVID-19 pandemic, but because it was online, many researchers and students could participate regardless time and distance. I think it will be great to hold an online symposium once every few years. It seems that some joint research will start with this symposium as a trigger. In the summer of year 2022, a face-to-face joint symposium of the three universities is planned. We look forward to welcoming you to Kagawa University.

Pictures



Abstracts

Technical Efficiency of Sustainable Broiler Production in Northern Thailand

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I. Abstract

Technical efficiency of sustainable broiler production showed the ability of broiler producers to maximize yields under the possible level of inputs. This study aimed to analyze the technical efficiency of sustainable broiler production in Northern Thailand and factors affecting the technical efficiency of sustainable broiler production in Northern Thailand. A secondary data of broiler industry for 17 provinces located in the north of Thailand was collected from 2015 to 2019. The collected data were theoretically analyzed using Super-efficiency Data Envelopment Analysis (SE-DEA) and Tobit regression. The results showed that all 17 provinces in Northern Thailand perform in technical efficiency differently. Lamphun Province showed the highest efficiency score at 3.93, while Phayao Province depicted the lowest technical efficiency score at 0.70. Furthermore, the factors affecting the technical efficiency of sustainable broiler production in Northern Thailand were the farmer's education levels, season, and farmer's age.

II. Results & Discussion

Technical efficiency of sustainable broiler production in Northern Thailand

The results of technical efficiency of sustainable broiler production in Northern Thailand with SE - DEA method found the average technical efficiency score is 1.31 during 2015 to 2019 which is at a very high level, and the technical efficiency score is greater than 1.00 due to the SE - DEA method. There are nine provinces or 52.93 percent of all provinces in Northern Thailand that the efficiency scores are greater than 1.00. Precisely, in the case of these six provinces; Lamphun, Phayao, Nan, Kamphaeng Phet, Phitsanulok, and Phichit, the efficiency score levels are 1.01 to 1.50, accounting for 35.29 percent. There is only one province, Nakorn Sawan, in which the efficiency score level is 1.51 to 2.00, accounting for 5.88 percent. Meanwhile, there are only Chiang Rai and Lamphun with the efficiency score level 2.51 to 3.00 and 3.01 to 3.50, respectively. The efficiency score level and the highest efficiency score show that Lamphun province had the highest efficiency score of 3.93. Eight provinces or 47.07 percent of all provinces in Northern Thailand had the efficiency score level of less than 1.00, divided into the efficiency score level of 0.9 to 0.99. There are two provinces, Mae Hong Son, and Uthai Thani, accounting for 11.77 percent. For the efficiency score level of 0.80 to 0.89, there are three provinces, Chiang Mai, Tak, and Phetchabun,

accounting for 17.65 percent. Finally, the efficiency score level was less than 0.80, there are three provinces, Phayao, Sukhothai, and Uttaradit with the least efficiency score at 0.70 of Phayao Province as in Table 1. However, the result found that provinces with an efficiency score level less than 0.80, did not indicate low efficiency because the least efficiency score (equal to 0.70) is still a high technical efficiency score level. The average efficiency score of all provinces in Northern Thailand greater than 1.00 indicated the high technical efficiency of sustainable broiler production in Northern Thailand as a whole. Lamphun Province has the highest technical efficiency in broiler production when compared with all provinces in Northern Thailand, resulted from the ability of broiler producers to maximize production under the possible level of inputs available. As such, the provinces in Northern Thailand have been successful in broiler production.

Table 1: Technical efficiency of sustainable broiler production in Northern Thailand during 2015 – 2019.

Efficiency score range	Number of provinces	Provinces	Percentage
< 0.80	3	PYO, STI, UTT	17.65
0.80 – 0.89	3	CMI, TAK, PNB	17.65
0.90 – 0.99	2	MSN, UTI	11.77
1.00	0	–	0.00
1.01 – 1.50	6	LPG, PRE, NAN, KPI, PLK, PCT	35.29
1.51 – 2.00	1	NSN	5.88
2.01 – 2.50	0	–	0.00
2.51 – 3.00	0	–	0.00
3.01 – 3.50	1	CRI	5.88
3.51 – 4.00	1	LPN	5.88
Mean		1.31	
Minimum		0.70	
Maximum		3.93	

Sources: From the results of the calculation

Factors affecting technical efficiency of sustainable broiler production in Northern Thailand

The study of factors affecting technical efficiency of broiler production in Northern Thailand with Tobit regression method found that three variables are affecting the technical efficiency of broiler production in Northern Thailand: 1) the farmer's education levels (EDU) at significance level 0.01 with the coefficient of 0.101867 which was the positive correlation. This suggests that with the higher education level, the technical efficiency of broiler production in Northern Thailand will be increased by 0.101867, 2) the season (SS) at the significant level 0.01 with the coefficient of 0.009425 which was the positive coefficient. This indicated that the higher the temperature, the

higher the technical efficiency of broiler production in Northern Thailand with 0.009425. 3) the farmer's age (AGE) at the significance level of 0.05 with the coefficient of 0.004311 which was the positive correlation means. This suggests that as the older farmer's age, the higher technical efficiency of broiler production in Northern Thailand with 0.004311 as found in Table 2.

Table 2: The results of factors affecting technical efficiency of sustainable broiler production in Northern Thailand.

Variable	Coefficient	p-value
Constant	0.002465	0.7441
Farmer's age (AGE)	0.004311**	0.0139
Gender of farmer (GEN)	0.001276	0.1782
Farmer's education levels (EDU)	0.101867***	0.0001
Number of households (HH)	0.035615	0.3531
Season (SS)	0.009425***	0.0020
Disturbance standard deviation	0.012127	0.0000
Log - likelihood function	50.88776	

Sources: From the results of the calculation

The results of factors affecting the technical efficiency of sustainable broiler production in Northern Thailand found that the farmer's age (AGE) affects the technical efficiency of broiler production in a positive correlation, which is consistent with the previous studies by Ali *et al.* (2014); Pakage *et al.* (2014). On the other hand, the studies by Ezeh *et al.* (2012); Todsadee *et al.* (2012); Ahiale *et al.* (2019) were found to be a negative correlation with the technical efficiency of broiler production in this study. Additionally, the farmer's education levels (EDU) affects the technical efficiency of broiler production in a positive correlation, which is in line with the studies by Begum *et al.* (2010); Ezeh *et al.* (2012); Ali *et al.* (2014); Zaman *et al.* (2018); Ahiale *et al.* (2019). However, the studies of Pakage *et al.* (2014); Oholi and Ayila (2018) showed a negative correlation with the technical efficiency of broiler production.

III. Conclusions

The sustainable broiler production in Northern Thailand had technical efficiency at a very high level from 2015 to 2019. The results found that the average technical efficiency score was 1.31 and Lamphun Province had the highest technical efficiency score at 3.93. In addition, the lowest technical efficiency score was found in Phayao Province at 0.70, which suggests a high-efficiency level score. Moreover, three factors are affecting the technical efficiency of sustainable broiler production in Northern Thailand namely, the farmer's education levels (EDU), season (SS), and farmer's age (AGE) with significantly different levels.

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Using Hazard Analysis and Critical Control Point to Reduce the Occurrence of Cattle Mastitis in a Farm !

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I. Introduction

The prevalence of mastitis in dairy cattle farms can be lower to around 5% and can be up to more than 100% in Taiwan. This disease is caused by more than 150 pathogens, which are divided into contagious, environmental, and mechanical pathogens. The infections lead to milk price penalty because of milk containing high somatic cells. Thus, how to manage the occurrence of mastitis to an acceptable level is always an issue.

Proper milking procedures are well introduced to reduce the occurrence of mastitis for farmers. Although some variation in steps have been introduced, basically, the procedures include the following steps. They are 1).wipe any debris from the teats of the cow and allows the teats to dry; 2).dip each teat; 3).massage and strip each teat and then check the quality of milk; 4).dip each teat again; 5).wait 60 to 90 seconds to allow the disinfectant to function; 7). dry each teat with a clean towel, one per cow; 8).attach milking unit; 9).remove the milking unit; 10). post-dip each teat.

The meaning of hazard analysis and critical control point (HACCP). described by FDA, is “a management system in which food safety is addressed through the analysis and control of biological, chemical, and physical hazards from raw material production, procurement and handling, to manufacturing, distribution and consumption of the finished product.” It is also suitable used in farm to manage the risk caused by different procedures to keep the milk in good quality. The purpose of this report

The study presents how to use the idea to well control the occurrence of mastitis in a farm.

II. Methods

After mastitis milk samples were cultured. the species and resistance-pattern was identified using an automatic phenotypic identification system, VITEK 2 Compact (bioMérieux, Paris, France).per manufacturer’s instructions. The milking procedure was evaluated after the bacteria was identified. The milk procedure was adjusted to fit the requirement of good milk practice. The occurrence of mastitis cases and the bulk milk somatic cells are recorded as the outcome. If the outcome was not satisfied, a new strategy, including how to treat the suffered cows and how to maintain a proper milking procedures, will be reevaluated and then re-introduced.

III. Results & Discussion

Before our intervention, the milking procedure has the following problems: 1).share towels among cows; 2).mean pre-dipping time = 2.5 s with 10% povidone iodine 400X diluted; 3).when try teats, towels are shared among cows; 4).mean milking time = 4 min; 5).use lactic acid without concentration determined for post-dipping. The prevalence of mastitis was around 13% (26/200). Somatic cells counts were 1.75 million/mL before our intervention. The pathogens causing mastitis were *Mycoplasma* spp. (38%). *Prototheca* spp. (19%). *Rhizobium radiobacter* (12%). *Acinebacter iwoffii* (4%). *Burkholderia cepacia* (8%). *Sphinogomonas paucimobilis* (4%). *Serratia ficaria* (4%). 12% of samples were under-determined. The pathogens were mainly contagious pathogens. After our intervention, the milking procedures were changed to 1).pre-dipping time mean = 18.9 s with benzalkonium chloride 80g/L 400X; 2).a teat a one-time wipe towel policy was used; 3).post-dipping solution is a commercial product Iodine 2.8 %w/w, Phosphoric Acid 9.7%w/w, Sulphuric Acid 9.5%w/w). The prevalence of mastitis was 4% (8/200). The pathogens were *Kocuria rosea* (50%). *Aeromonas sobria* (13%). *E. coli* (13%). *Gardnerella vaginalis* (13%).and *Mycobacterium fortuitum* (13%). The main pathogens were mainly opportunistic pathogens. After our intervention, the somatic cell counts were 1.57 million/mL. Less amount of milk was withdrawal significantly.

Mastitis harasses farmers a lot. To reduce the occurrence, veterinarians must work together with farmers and use the ways that farmers prefer. Using HACCP to find the most important points and then find solutions to reduce the risks should be beneficial.

We believe this report supplies a good example for veterinarians and farmers to follow.

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Synthesis and Biological Evaluation of Oscillatoxins and Aplysiatoxins

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I. Background

Oscillatoxins (OTXs) and aplysiatoxins (ATXs) are naturally occurring polyketides that were produced by marine cyanobacteria such as *Lyngbia*, *Schizothrix*, and *Oscillatoria* spp. Some derivatives with macrolide structures activate eight protein kinase C (PKC) isozymes and show potent anti-proliferative activity against several cancer cell lines. PKC is a family of serine/threonine kinases that regulates diverse cellular signal transductions related to cell proliferation, differentiation, and apoptosis. Therefore, these PKC activators and their simplified analogs are estimated to be potential medicinal seeds,^{1,2} and their cytotoxic mechanisms have been intensively studied.^{3,4} On the other hand, biological activities of non-macrolide type derivatives have not been fully evaluated. Among these compounds, OTX-D and 30-methyl-OTX-D attracted our interest, because they were reported to be antileukemic against L1210 cell line.⁵ However, the details on the effective concentration and the mode of action have not been provided. Hence, in this study, we collectively synthesized OTX-D, 30-methyl-OTX-D and its related derivatives (OTX-E, OTX-F), and evaluated their affinity for PKC and *in vitro* cytotoxicity toward leukemia and cancer cell lines.

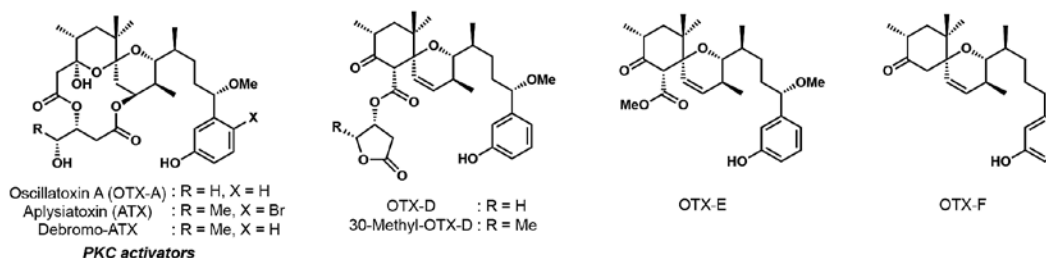


Figure 1. Structure of aplysiatoxins and oscillatoxins

II. Results & Discussion

We achieved the total synthesis of OTX-D, 30-methyl-OTX-D, OTX-E, and OTX-F by an intramolecular Mukaiyama aldol reaction as a key step,^{6,7} and applied them to *in vitro* biological assays. These compounds did not bind to PKC δ , but their cytotoxicity to L1210 cell line was similar to that of debromo-ATX, a potent PKC activator. Moreover, a panel of 39 human cancer cell lines revealed that OTXs showed different efficacy profiles from debromo-ATX (Figure 2). Especially, OTX-F showed a cell line-selective anti-proliferative activity against DMS114 cell line. This selectivity profile differed from that of any other anti-cancer drugs available today, suggesting that OTXs inhibited the proliferation of leukemia and cancer cells through a unique mode of action.⁷

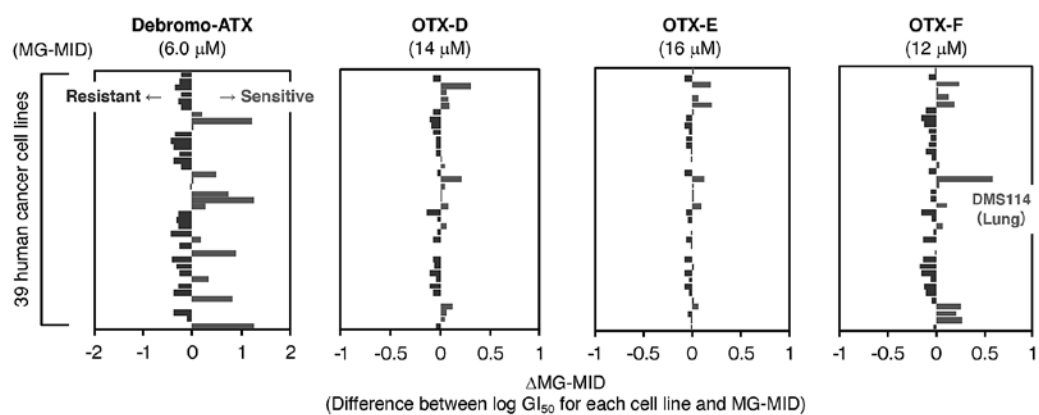


Figure 2. Efficacy profiles of debromoaplysiatoxin and oscillatoxins

III. References

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Utilization of Functional Phytochemicals in Rice Seeds for Health Promotion

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I. Introduction

Functional phytochemicals in rice seeds including tocotrienols (T₃), tocopherols, gamma-oryzanol, and phytosterols have evidenced for their physiological benefits such as anti-oxidative, anti-hypercholesterolemic, and anti-angiogenic properties. Despite their benefits, consumers hardly receive those components from consuming rice on a daily basis. For instance, outer layers of rice seeds, so-called rice bran, where the components locate, is normally removed during the rice polishing process. Therefore, strategic utilization of the functional phytochemicals in rice seeds should be carefully designed to achieve their maximum health benefit.

II. Methods

A number of approaches were introduced and employed in order to effectively utilize rice functional phytochemicals. A model study for bio-fortification of T₃ in rice bran was purposed by screening T₃-rich rice variety, and cross-fertilization for improving T₃ content. A rapid determination method of rice phytochemicals was developed. An innovative cold-plasma technology was applied for enhancing rice antioxidants. Supercritical carbon dioxide extraction (SC-CO₂) was proposed as a non-thermal processing of rice bran oil with high nutritional value. In addition, an example of development of T₃-fortified food was demonstrated.

III. Results & Discussion

Rice bran functional lipids can be improved by good breeding management [1]. Pigmented rice varieties appear to have superior content of rice phytochemicals [2]. A simultaneous quantitation method of 18 functional compounds in rice bran was developed using high-performance liquid chromatography coupled with diode array detector and fluorescence detector (HPLC-DAD-FLD) technique [3]. Plasma technology can enhance nutritional value of rice bran with short-time processing [4]. SC-CO₂ extraction with modifier is a promising tool for preparation of rice phytochemical essences [5]. On the basis of the findings, rice bran functional lipids would be better utilized for promoting human health and well-being [6].

IV. References

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UV-denatured Whey Protein Enhances the Photo-stability of Anthocyanins in Black Soybean Milk Drinks

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I. Background

Health benefits of anthocyanins, such as anti-inflammatory, hypoglycemic, and liver protection, have been reported in recent years. Black soybean contains high amount of anthocyanins in the seed coat; thus, it is considered as a good resource of health-improvement foods. In traditional, black soybean is mainly for the production of soybean sauce in Taiwan. In recent years, new types of processing products from black soybean show high demand are black soybean milk drinks. Two kinds of milk drinks are available in Taiwan market, one is made from black soybean alone, and the another is made from black soybean and milk. Such milk drinks have received more attention in Taiwan's young generation who do exercise very often and require high protein intake. To develop anthocyanins enriched black soybean milk drinks, the photo-stability of the anthocyanins in the milk proteins needs to be investigated because anthocyanins are quite sensible to UV or light treatment. It is well known that milk proteins such as whey protein can interact with anthocyanins to enhance their thermal stability. In this study, we investigated the photo-stability of black soybean's anthocyanins influenced by native or UV-denatured whey protein.

II. Methods

Anthocyanins were extracted from black soybean seed coat, and then mixed with whey protein solution with or without UV pre-treatment. The determination of the total anthocyanin content of the mixture was conducted after UV post-treatment. Also C3G, and D3G contents in the mixture also determined after UV posttreatment using HPLC.

III. Results & Discussion

The determination of the total anthocyanin, C3G, and D3G contents indicated that whey protein increased the amount of total anthocyanins, C3G, and D3G after UV treatment; furthermore, UV-denatured whey protein obtained even better effect. Therefore, it was concluded that whey protein could enhance the photo-stability of black soybean's anthocyanins.

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Antibacterials targeting the exporters of extracellular polysaccharides

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I. Introduction

Antibacterial resistance (AR) is causing more and more bacterial infections that cannot be cured by using the antibacterial drugs that are currently available. It is predicted that 10 million people will die every year by 2050 from infections caused by antibacterial resistant strains, surpassing the predicted numbers of deaths caused by cancer. AR is therefore a global challenge and novel antibacterial strategies are in high demand. To this end, exploration of the pore properties of a series of bacterial sugar transporters, Wza, could contribute to the development of novel antibacterials to fight against AR. (Fig.1).

II. Methods

The initial reported experimental procedures have been further developed to enable efficient studies of other Wza homologs that are more common in bacterial pathogens causing significant bacterial infections. The most recent protocols and logistics behind the research on Wza channel activity, antibacterials, and strategies are essential for Wza drug discovery. The key disciplines include computation, molecular biology, biochemistry, electrophysiology, microbiology, and single-molecule biophysics.

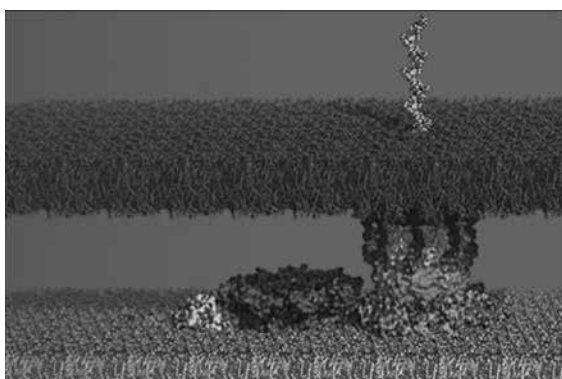
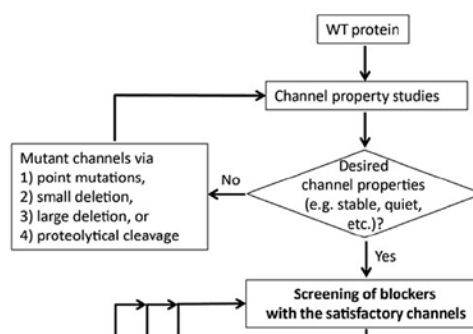


Figure 1. A typical machinery for the export of extracellular polysaccharides in bacteria.



Scheme 1: Partial flowchart to discover initial drug candidate against membrane protein channels.

III. Results & Discussion

Single-molecule recapitulation of capsular polysaccharide (CPS) export and pore formation properties of Wza barrel peptides have revealed the possibility of next-generation Wza strategies. These strategies are based upon the first examination and understanding of the pore properties of

wild-type (WT) and mutant WzaK₃₀ in singlemolecule electrical channel recording. Extension of the established protocols in reported disciplines and establishment of methods in other disciplines are both being pursued in order to bring the Wza-targeting antibacterial research forward into the forthcoming digital era for its further rapid development. The protocols could be summarized in a flowchart (Scheme 1). Computational studies have particularly enriched the understanding of experimental results and helped design of stronger inhibitors against the Wza exporter.

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Human Evidence for Choline Intake Promotion Across Lifespan

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I. Introduction / or Background

Choline is an essential nutrient found in several components of a healthy diet. Choline is concentrated in animal-sourced foods (e.g., eggs, beef, poultry and fish), grains (e.g., wheat germs and soybeans), nuts, seeds, and some vegetables (Patterson et al., 2008). Choline can also be made within the body, though endogenous production is not sufficient to meet metabolic needs (S H Zeisel et al., 1991). Both dietary and endogenous choline are metabolized to compounds that function in the production of membrane phospholipids, lipoproteins, the methyl-group donor S-adenosylmethionine, and the neurotransmitter acetylcholine (Steven H Zeisel, 2006). Acetylcholine has been implicated in the reduction of blood pressure (BP) and heart rates, and this response to acetylcholine declines with age (Fischer, da Costa, Kwock, Galanko, & Zeisel, 2010; Resseguie et al., 2007). Therefore, older adults rely on dietary choline to meet their metabolic needs.

Several populations across the world are at a high risk of choline insufficiency. Adequate Intake levels of choline are 425 mg/day for adult women and 550 mg/day for adult men. However, average choline intake in the U.S. was 279 mg/day for women and 421 mg/day for men (Wallace & Fulgoni, 2017). In Japan, the averages were 416 and 484 mg/day for women and men respectively (Nagata et al., 2015), while in Taiwan women and men consumed on average 265 and 372 mg/day of choline (Chu, Wahlqvist, Chang, Yeh, & Lee, 2012). Currently, there are no estimates of choline intake situation in Thailand.

The essential roles of choline across lifespan, along with the high degree of choline insufficiency in several populations across the world, make choline a potential target nutrient for nutritional intervention. The objectives of the current study are to 1) investigate the relationships between total choline intake and hypertension and BP among U.S. adults aged ≥ 65 years, and 2) survey the current choline intake level in a Thai university student population.

II. Methods

A cross-sectional analysis was conducted to investigate the association between total choline intake and hypertension prevalence using 2,113 U.S. adult population aged ≥ 65 years in the

National Health and Examination Survey 2011–2014. Choline intake information was obtained from 24-hour dietary recalls. Hypertension status was determined using BP measurements, self-reported diagnosis and/or antihypertensive medication use. Complex-survey design logistic and linear regression models were used to analyze the association of choline intake with hypertension and BP respectively. Effect modification by sex, race, body mass index (BMI) and comorbidity status were separately investigated using an interaction term.

In another cross-sectional study, dietary choline intake data were collected in 412 Chiang Mai University students. Questionnaires were used to collect social and health information. Anthropometric measurements (weight, height, and waist and hip circumferences) as well as one to two 24-hour dietary recall interviews were performed by trained personnel. Food choline contents were obtained from the USDA food composition database following the International Network of Food Data Systems guideline (Food and Agriculture Organization). Usual intake distribution of dietary choline was calculated using the Multiple Source Method (the German Institute of Human Nutrition Potsdam-Rehbrücke).

III. Results & Discussion

In the U.S. older adult population, choline intake interacted with BMI (P-interaction=0.04) such that choline intake tended to be associated with lower odds of hypertension among people with BMI <18.5 kg/m² (Odds ratio [95% CI]: 0.64 [0.4,1.00]; P=0.052). Choline intake was not associated with systolic BP (mean ± SEM change per 100 mg of choline: -1.03 ± 0.74 mmHg; P=0.16). In contrast, its relation to diastolic BP differed by cardiovascular comorbidity (P-interaction=0.03) with a non-significant (P=0.13) negative direction of association observed among those who were free of comorbidities and a non-significant (P=0.26) positive direction observed among those with comorbidities. Collectively, these results suggested that the associations of choline intake with BP levels and hypertension risk among older adults are dependent on other risk factors.

Preliminary results of the cross-sectional survey in Thailand were based on 114 students. The usual intake of choline in the total population was (mean ± SD) 366 ± 65 mg/day, with 350 ± 62 mg/day observed in women (n=72) and 392 ± 59 mg/day observed in men (n=42). At least 75% of women and 95% of men were estimated to not meet the Adequate Intake level for choline. Choline intake tended to be correlated with BMI in women only (Pearson's $r = 0.21$; P=0.09) and not with waist-to-hip ratios, a measure of abdominal obesity, in either sex (P>0.05). These preliminary results show for the first time the estimates of usual choline intake in a Thai population and reveal that most of the population are at risk of choline inadequacy.

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We should NOT fall: our battles to the fall armyworm, *Spodoptera frugiperda* (J.E.Smith, 1797)

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I. Background

The fall armyworm (FAW) , *Spodoptera frugiperda* (J.E. Smith, 1797) (Lepidoptera: Noctuidae) , has recently invaded Taiwan. It is native to the Americas and can feed on at least 353 plant species from across more than 76 families: among them, crops of Poaceae such as corn (*Zea mays*), rice (*Oryza sativa*) and sorghum (*Sorghum bicolor*) are particularly preferred. we cannot ignore the possibility that fall armyworm could cause serious damage to other important economic crops because of its polyphagy and migratory.

II. Methods

Currently, chemical control is the main way to suppress fall armyworm populations but the resistance could be rapidly introduced due to the long-term and large-scale application. Different degrees of resistance of FAW to a variety of chemical pesticides have been reported from many areas, including the United States, Puerto Rico, Mexico and Brazil. Therefore, the development of environmental-friendly methods, such as the use of entomopathogens, should be conducted. We tested the virulence of some commercial *Bacillus thuringiensis* strains against FAW which collected from different areas in Taiwan. We have also collected several endemic Taiwanese entomopathogenic *Metarhizium anisopliae* and tested their virulence against FAW.

III. Results & Discussion

We have compared our results with the efficacy of commercial biological control agents including two strains (kurstaki and aizawai) of *Bacillus thuringiensis* (Bt) as well as *Beauveria bassiana*. In general, the Bt aizawai strains resulted in a highest mortality of FAW larvae among all comparisons and the third instar larvae were more sensitive to these biological control agents than five instar larvae. Our results could be included in the decision making and help to control this pest in future.

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Development of cultivating methods to achieve high yield and quality in wheat for bread and durum wheat

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I. Background

The wheat for bread and durum wheat are difficult to achieve high yield and grain quality at the same time. In quality evaluation of wheat for bread, grain protein content (GPC) more than 11.5% was required. In quality evaluation of durum wheat, greater yellow concentration in grain and harder grain hardness were required. These traits are enhanced by increased GPC¹⁾. Therefore, higher GPC is necessary to achieve high grain quality in these wheats but GPC is negatively correlated with yield of wheat²⁾.

Preventing lodging is important to apply a large amount of nitrogen (N). To achieve both high yield and grain quality in wheat, it is necessary to apply a large amount of N and to be accumulated N in wheat body²⁾. However, a large amount of N application increases risk of lodging³⁾. Lodging in wheat decreases yield and grain quality⁴⁾ and increases the risk of getting fusarium head blight in wheat spike⁵⁾. Therefore, it is necessary to develop a cultivation method which can apply a large amount of N while preventing lodging.

II. Previous studies

Improvement of N application method for high yield and grain quality

In Japan, 70% of total N application amount was applied split into two times before stem elongation to increase tiller number, but N uptake efficiency in these stages is low at about 15% and 37%⁶⁾. Moreover, 60% of tillers which appeared at the initiation of stem elongation stage was dead at maturity and do not contribute to yield⁷⁾. Therefore, I considered that N application before stem elongation stage should be inhibited and transferred to stem elongation stage which is important N top-dressing stage to increase yield⁸⁾. As a result, the yield of modified N application method was increased by increasing fertile spike number at maturity, and the decrease of GPC due to high yield was prevented by increasing N accumulation above ground⁹⁾.

Verification of the direct cause of lodging

Previous study has reported that lodging is induced by N top-dressing during stem elongation stage⁸⁾, but the modified N application method did not increase plant height even though N was applied more than three times during this stage compared to conventional⁹⁾. The modified N application limited N application before stem elongation thus plant growth at the initiation of stem elongation was inhibited. Therefore, I hypothesized that lodging is induced by mutual shading between wheat plants rather than N top-dressing. As a result, it was clarified that wheat with low light receiving was induced severer lodging by lengthened lower internode length and lighten

internode dry weight per unit length which positively correlated with internode strength¹⁰⁾.

III. Future studies

Image-based growth diagnosis and variable-rate N top-dressing

To achieve stable high yield and grain quality in wheats, development of variable-rate N top-dressing method which adjusts the amount of N top-dressing based on the growth diagnosis is important. However, the studies about variable-rate N top-dressing based on the growth diagnosis in wheat are limited and devices which effective to measure plant growth are expensive. Therefore, it is important to develop new method which can estimate growth parameters by easily and cheap.

The plant growth diagnosis would be effective to control the risk of lodging. The plots with sever lodging showed higher ratio of canopy coverage which calculated from image taken by smartphone at the initiation of stem elongation stage¹⁰⁾. Therefore, I investigated the relationships between canopy coverage and stem morphology in 2018/19 and 2019/20. As a result, canopy coverage is significantly negatively correlated with the internode dry weight per unit length and lodging degree at maturity. However, the intercepts of these regression lines were significantly affected by cropping season. Furthermore, the slope will be changed by varieties with different leaf shape since this study used only one wheat variety for bread. The reports focused on plant growth around stem elongation stage are limited thus it is necessary to verify in more detail.

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【 Sustainability & Technology Session 】



Sustainability & Technology Session

Organizing committee

Asst. Prof. Kasemsak Uthaichana, Faculty of Engineering, Chiang Mai University (Head of Session)

Prof. Chiung-Wu Su, Faculty of Science & Engineering, National Chiayi University (Head of Session)

Prof. Ishizuka Masahide, Faculty of Engineering and Design, Kagawa University (Head of Session)

Ms. Riko Tamura, International Exchange Committee of the Faculty of Engineering and Design, Kagawa University

Chairpersons

Asst. Prof. Kasemsak Uthaichana, Faculty of Engineering, Chiang Mai University

Prof. Chiung-Wu Su, Faculty of Science & Engineering, National Chiayi University

Prof. Ishizuka Masahide, Faculty of Engineering and Design, Kagawa University

Session information

Satellite Online Session on “Sustainability & Technology Sessions”

in the 1st Trilateral Symposium on SDGs

jointly organized by Kagawa University, Chiang Mai University, and National Chiayi University

Date: 1st Sept. 2021 (Wed)

Time: 10:00-12:35 (UTC+9, Japan)

9:00-11:35 (UTC+8, Taiwan)

8:00-10:35 (UTC+7, Thailand)

Online session only (Faculty of Engineering and Design, Kagawa University hosted the Zoom session)

Language: English

Presentation time: 10 min talk plus about 5 min discussions

Restrictions: All the participants are prohibited from taking photos, screenshots, or video recording etc. during the presentations.

Participants: Faculty and staff members, researchers, and students of three universities, plus other persons with the organizers' permission.

Registration: necessary

via (<https://www.kagawa-u.ac.jp/kuio/circ/event/pre-trilateral-symposium-sdgs/>)

Access: After you make a pre-registration, you will receive e-mail from Secretary Office of the

Trilateral Symposium on SDGs 2021 around 30 or 31 August. DO NOT distribute it to anyone other than those involved.

Session Organizers:

Asst. Prof. Kasemsak Uthaichana, Faculty of Engineering, Asst. Chiang Mai University (CMU)

Prof. Chiung-Wu Su, Faculty of Science & Engineering, National Chiayi University (NCYU)

Prof. Masahide Ishizuka, Faculty of Engineering and Design, Kagawa University (KU)

Table 1: Local Organizing committee member list

1) Prof. Masahide Ishizuka Faculty of Engineering and Design, (Architecture, Civil and Environmental Engineering), Kagawa University
2) Ms. Riko Tamura Faculty of Engineering and Design, (Academic Affairs and International Exchange Committee), Kagawa University

Table 1 shows the local organizing committee members. Prof. Masahide Ishizuka, chair of the International Exchange Committee of the Faculty of Engineering and a member of the Preparatory Committee of this symposium, and Ms. Riko Tamura, Ms. Mari Yamaguchi, and Ms. Yoko Hamaguchi from the International Exchange Committee of the Faculty of Engineering, who are in charge of academic affairs, prepared for the Sustainability and Technology Session.

Program

Date: September 1, 2021 Time: 10:00 - 12:35 (Japan Standard Time)

Opening: Chairperson: Prof. Masahide Ishizuka, Kagawa University	
10:00-10:05	Prof. Yoshihiro Suenaga, Dean of Faculty of Engineering and Design, Architecture, Civil and Environmental Engineering, Kagawa University,
Session I: Chairperson: Prof. Chiung-Wu Su, National Chiayi University	
10:05-10:20	Prof. Yoshifumi Suzaki Faculty of Engineering and Design, Advanced Materials Science, Kagawa University Antifouling transparent ZnO thin films fabricated using Atmospheric Pressure Cold Plasma (Invited-talk)
10:20-10:35	Master student Year 1, Atsuki Nakayama, Prof. Yoshifumi Suzaki, Faculty of Engineering and Design, Advanced Materials Science, Kagawa University Improving of the efficiency of catalyst on the polymer electrolyte fuel cell electrode using chemically adsorbed monolayer

10:35-10:50	Assoc. Prof. Hayato Miyagawa Faculty of Engineering and Design, Advanced Materials Science, Kagawa University Rietveld Analysis of Eu-doped Phosphors under tetrahedral constraint on Si-O bonds (Invited-talk)
10:50-11:05	Bachelor student Year 4, Tomoaki Takemura, Assoc. Prof. Hayato Miyagawa Faculty of Engineering and Design, Advanced Materials Science, Kagawa University Fabrication of magnetic line of Py/Fe bilayer and current induced magnetic domain structure
11:05-11:15	Break
Session 2: Chairperson: Asst. Prof. Kasemsak Uthaichana, Chiang Mai University	
11:15-11:30	Prof. Chiung-Wu Su Institute of Science and Engineering, Department of Electrophysics, National Chiayi University Angle of incidence magneto-optic polarimetry on interfaces of multilayers system and applications (Invited-talk)
11:30-11:45	Master student Year 2, Tsuen-Shin Deng, Prof. Chiung-Wu Su Institute of Science and Engineering, Department of Electrophysics, National Chiayi University Studies of generation and detection of spin current on n-GaN/a-sapphire spin devices
11:45-12:00	Master student Year 1, Chien-Peng Wu, Bachelor student Year 4, Po-Hung Wu, Bachelor student Year 3, Yi-Pei Lai, Prof. Chiung-Wu Su Institute of Science and Engineering, Department of Electrophysics, National Chiayi University Angle dependent magneto-optical properties of plasma treatment on top and bottom magnetic interfaces
12:00-12:15	Asst. Prof. Korawan Sringarm Faculty of Agriculture, Animal and Aquatic Sciences, Chiang Mai University Development of high quality commercial extender for frozen bull semen (Invited-talk)
12:15-12:30	Asst. Prof. Kittisak Jantanasakulwong Faculty of Agro-Industry, Packaging Technology & Innovation, Chiang Mai University Sustainability of current bioplastic technology (Invited-talk)
Closing: Chairperson: Prof. Masahide Ishizuka, Kagawa University	
12:30-12:35	Prof. Toshihiro Hayashi, Vice Dean, Faculty of Engineering and Design, Program in Media and Product Design, Kagawa University

Summary of the session

the Sustainability and Technology Session, two sessions were held. Session 1 was on materials science, and two faculty members, one graduate student, and one undergraduate student from Kagawa University made presentations. In Session 2, one faculty member and two graduate students from National Chiayi University, and two faculty members from Chiang Mai University made presentations.

This session invited five impressive speakers. Prof. Yoshifumi Suzuki presented “Antifouling Transparent ZnO Thin Films Fabricated Using Atmospheric Pressure Cold Plasma”. Dr. Hayato Miyagawa presented “Rietveld Analysis of Eu-doped Phosphors under tetrahedral constraint on Si-O bonds”. Prof. Chiung-Wu Su presented “Angle of incidence magneto-optic polarimetry on interfaces of multilayers system and applications”. These topics are related to the latest material science. The production of silicon based semiconductor required extensive investment in specially designed cleanroom. The current induced magnetic domain structure has potential for small incident detection in the magnetic field which requires 15–20 years for development to maturity. We discussed such fundamental and their applicable technologies are necessary for broad environment and sustainable developments. In addition, Prof. Su talked about his long history of exchange between Kagawa University and National Chiayi University. Dr. Korawan Sringarm presented “Development of high quality commercial extender for frozen bull semen”. This research shows an example of applying engineering technology to a wider field, and I was able to think about one direction and a new theme of new cooperative relationships. Dr. Kittisak Jantanasakulwong presented “Sustainability of current bioplastic technology”. Research on this topic has not been conducted at Kagawa University, and it is a useful presentation for future complementary joint research and information exchange.

In this session, four students made presentations. We shared the importance of student exchanges as well as research activities.

Future cooperative research and frameworks

The Faculty of Engineering and Design, Kagawa University has seven programs: programs in Media and Product Design, Architecture Civil and Environmental Engineering, Disaster and Crisis Management, Computer Science Systems and Security, Information and Communications Technology, Mechanical Systems, Advanced Materials Science (ref. 1).

The College of Science and Engineering, National Chiayi University has eight departments: Departments of Electrophysics, Applied Chemistry, Applied Mathematics, Biomechatronic Engineering, Civil and Water Resources Engineering, Computer Science and Information Engineering, Electrical Engineering, Mechanical and Energy Engineering (ref. 2).

The Faculty of Engineering, Chiang Mai University has seven departments: Departments of Civil Engineering, Electrical Engineering, Mechanical Engineering, Environmental Engineering, Mining Engineering and Petroleum, Industrial Engineering, Computer Engineering (ref. 3). In addition, Chiang Mai University has various organizations related to technology such as Faculty

of Architecture (ref. 4), College of Marine Studies and Management (ref. 5), College of Art, Media and Technology (ref. 6), Biomedical Engineering Institute (ref. 7). In addition, since there were two presentations from the Faculty of Agriculture and the Faculty of Agro-Industry in this session, it can be said that the exchange between faculties that is being conducted at Kagawa University can be used as a reference for Chiang Mai University.

As mentioned above, the three universities have common faculties, departments, and research institutes. The International Exchange Committee of the Faculty of Engineering and Design as well as the special commissioners of each university will play a central role in strengthening the relationship regarding organizational and individual research themes. This will lead to a success of the next year's 2nd Trilateral Symposium in Kagawa University.

References:

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2. College of Science and Engineering, National Chiayi University, https://www.ncyu.edu.tw/eng/gradation.aspx?site_content_sn=9408
3. Faculty of Engineering, Chiang Mai University, <https://eng.cmu.ac.th/english/>
4. Faculty of Architecture, Chiang Mai University, <https://www.arc.cmu.ac.th/?lang=en>
5. College of Marine Studies and Management, Chiang Mai University, https://www.cmu.ac.th/en/faculty/college_of_marine_studies_and_management/aboutus/head
6. College of Art, Media and Technology, Chiang Mai University, https://www.cmu.ac.th/en/faculty/the_college_of_arts_media_and_technology/aboutus/head
7. Biomedical Engineering Institute, Chiang Mai University, https://www.cmu.ac.th/en/faculty/biomedical_engineering_center/aboutus/head

All links are accessed on 30 October, 2021.

Challenges and preparations for the 2nd Trilateral Symposium on SDGs

The following 5 figures show an introduction of research related to SDGs at five areas of the Faculty of Engineering and Design, Kagawa University. These researches are related to Sustainable Development Goals No. 3, 7, 9, 11 and 12. These are part of the research of the Faculty of Engineering and Design and we believe we can make a significant contribution in achieving the SDGs.



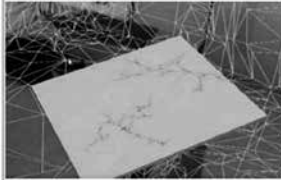
Development of evacuation training system for Earthquake disaster utilizing mixed reality

By Hitoshi Inomo and Kyosuke Takahashi
Faculty of Engineering and Design, Program of Disaster and Crisis Management

Evacuation training system utilizing MR

Reproduce various situations at the time of disaster

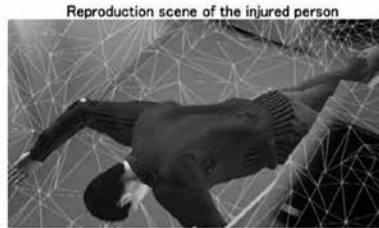
- Produce unexpected events by combining holograms, motions, and sounds



Scene of Ceiling board falling



Scene of falling boxes



Reproduction scene of the injured person

Utilization in other evacuation training systems

- Disaster response competency development training using a disaster simulation/response competency training system (Located in Kagawa University)
- Disaster situation images are shown on three 80-inch screens using 3D-VR.
- Training on situation judgment, decision making and flow of actions in critical situations.
- Scenario changes depending on the ability of the experience person to respond.
- It is difficult to add a new event that reproduces the disaster situation (constrained by scenario production time and cost)



Utilization of MR

- It is possible to easily add various disaster situations
- [For example]**

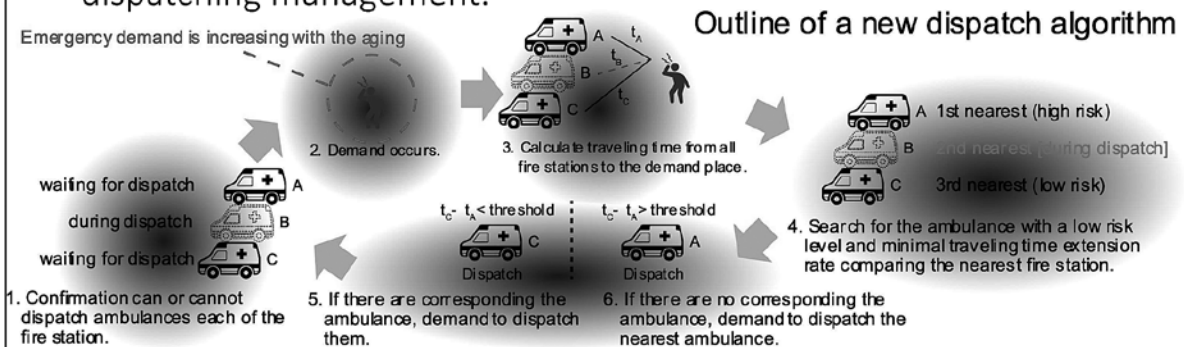
- Scene of locker falls and a child is sandwiched between locker and floor.
- Scene of fire (in science laboratory, cooking room etc.)
- Scenes where students are injured with laboratory equipment and chemicals etc.



Development of an Emergency Response Algorithm Focusing on Shortening of Response Time



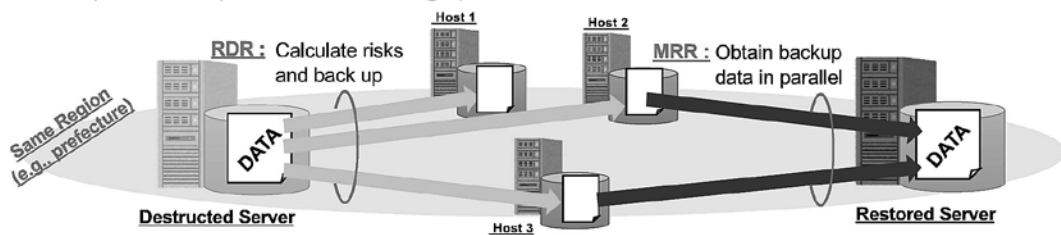
- Currently, ambulance dispatch management in Japan is based on searching for the nearest unit by GPS and requesting dispatch.
- However, this is an early first-come-first-served system, and if it looks backwards, there may be a case that the pairing of inefficient dispatch was done.
- In order to improve such inefficiency, we have developed a dispatching algorithm that is better than the conventional dispatching management.





- ◆ Highly available storage system has been developed by Tohoku University and Hitachi, Ltd. from 2012 to 2017. (*)
- ◆ To improve the data availability, the research of fast data restoration technology based on the system will be promoted in Kagawa University.

- ◆ Overview of previous research worked by Tohoku University and Hitachi, Ltd.
 - ◆ **Background:** Large-scale disasters cause network disconnection and data corruption, and information services depending on the network and the data are not available from disaster sites.
 - ◆ **Challenges:** To utilize the information services from the disaster sites, it needs to develop the novel data protection technology and the fast data restoration technology.
 - ◆ **Proposal:** RDR (Risk-aware Data Replication) ⁽¹⁾ considering risks backs data up to nearby hosts. And MRR (Multi-Route Restoration) ⁽²⁾ obtains backup data in parallel to achieve high throughput.
- ◆ In Kagawa University, the new data restoration technology based on the MRR will be developed to improve the throughput of data restoration even more.

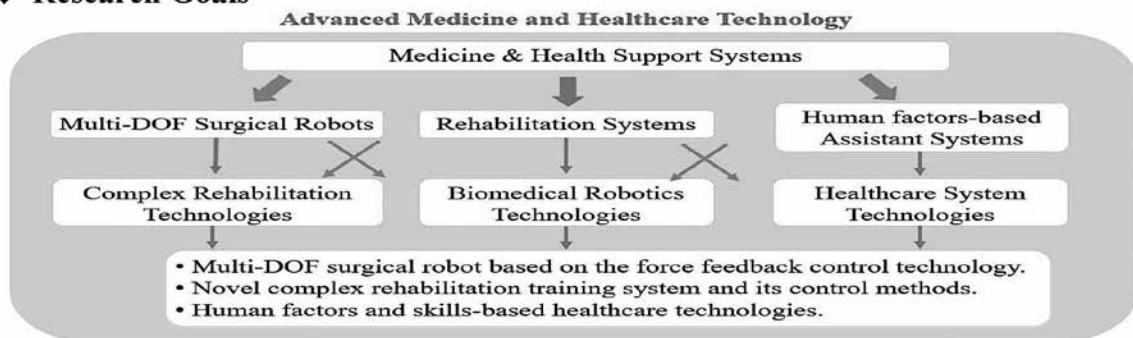


(*) This work was supported as "Research and Development on Highly Functional and Highly Available Information Storage Technology," sponsored by the Ministry of Education, Culture, Sports, Science and Technology in Japan. (Project leader: Prof. Hiroaki Muraoka)
 (1) T. Nakamura, et al. : "Discreet Method to Match Safe Site-Pairs in Short Computation Time for Risk-aware Data Replication", IEICE Transactions on Information and Systems, Vol. E98-D, No. 8, pp. 1493-1502, 2015
 (2) H. Kamei, et al. : "An Evaluation of Restoration Time and the Amount of Backup Data of Data Replication Method for Large-scale Disasters", IEEE Transactions on Electronics, Information and Systems, Vol.137, No.11, pp.1516-1525, 2017

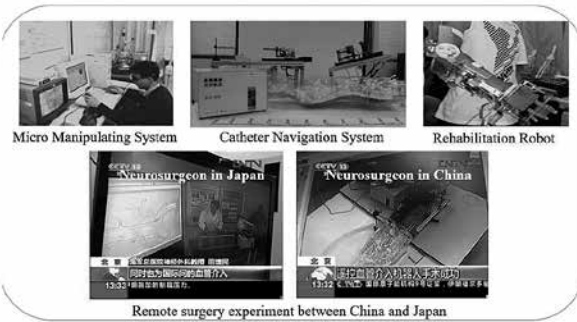
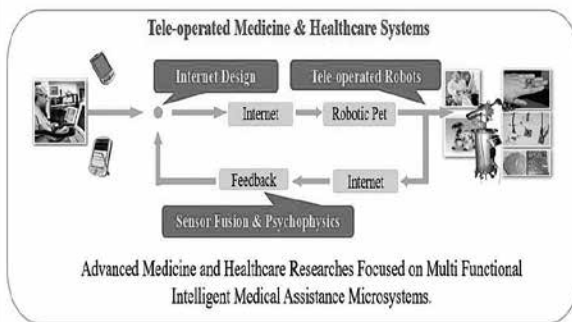


The Advanced Medicine and Healthcare Systems

◆ Research Goals



◆ Research Topics and Selected Results

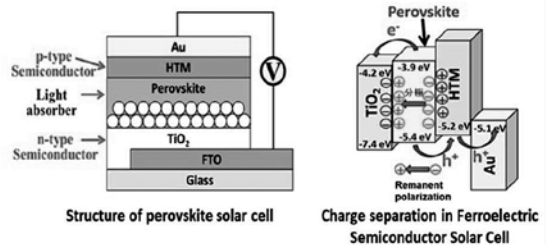




New innovative materials (for enhanced function or structural properties)

◆ Ferroelectric Semiconductor Perovskite Solar Cells

A new type of ferroelectric semiconductor solar cell is proposed. The synergistic effect of p-n junction and ferroelectric polarization charge separations enhanced the performance of perovskite solar cells which are different from normal semiconductor solar cells. (from Qi Feng Lab.)



◆ Light weight structural Ti alloy contributing to reduction of energy consumption for transportation system

Light weight structural titanium alloys is developed for the enhanced strength with keeping ductility and workability by new type of microstructural control technique. This research will contribute to the reduction of energy consumption for the transportation system such as airplane. (from Hiroaki Matsumoto Lab.)



Chairperson comments

Asst. Prof. Kasemsak Uthaichana, Faculty of Engineering, Chiang Mai University

Possible Future Collaboration Activities:

- Cold Plasma has potential applications in the field of thin films. CMU has researchers and equipment in the Plasma Lab at STeP-led by Asst. Prof. ChonChareon. A new collaboration can be established to strengthen the relationship in this area.
- The attempt to lower the level of platinum required to coat the Naf ion based fuel cell has been discussed by KU. CMU has the fuel cell expertise in the team of Asst. Prof. Kollayuth from Faculty of Engineering who may be interested to join.
- CMU is recommended to be involved in the beef industry of Japan in order to gain reputation such as collaborative research works of Prof. Patai and Asst. Prof. Korawan with established firm SiamNovas®.

CMU is keen in joining the development of bio-plastic material for everyday use such as plasticware.

Prof. Chiung-Wu Su, Faculty of Science & Engineering, National Chiayi University

The international workshop is successful due to the efforts done by Kagawa University and Prof. Ishizuka. My opinions and suggestion on the Technology session is as follows:

- 1) The time of discussions for each talk can be longer. Time of each talk can be short (~5 to 7 min) but discussion can be much deeper and wider (~10 to 15 min).

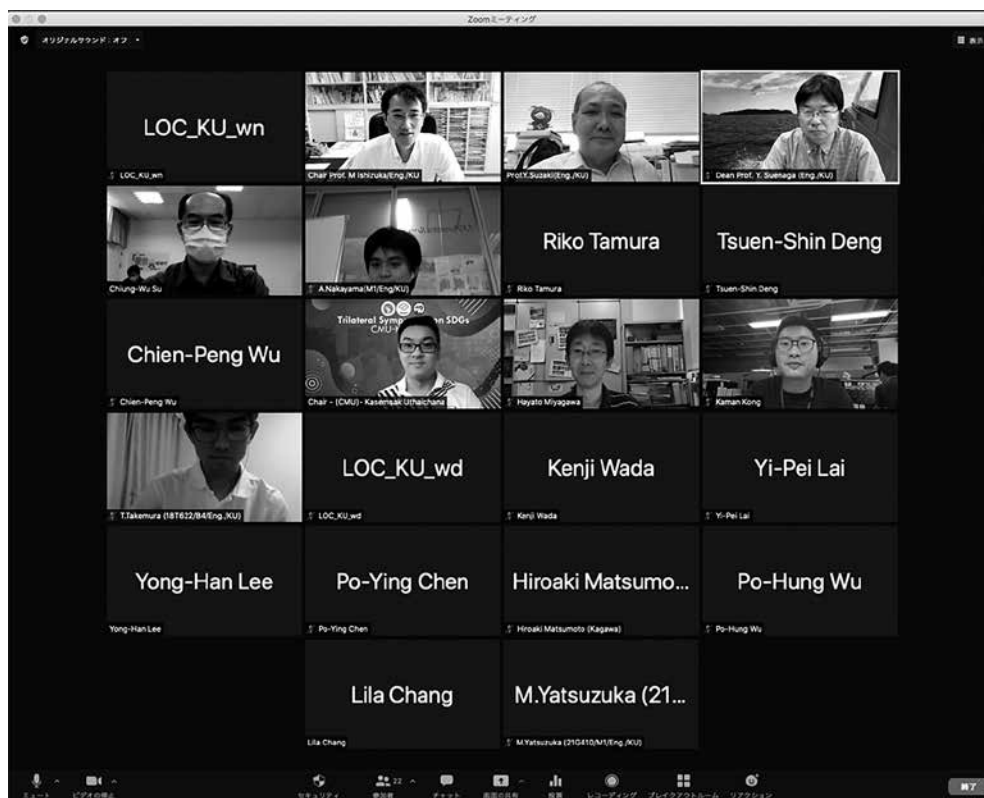
- 2) The issue about each university's SDGs in the future can be focused by the chairperson in the session conclusion.
- 3) Speakers or audiences (teachers or students) can share more about how to focus on one interdisciplinary issue for future trilateral university cooperation. (i.e. research faculty exchange or equipment support)

Prof. Masahide Ishizuka, Faculty of Engineering and Design, Kagawa University

As for our achievement, the Sustainability and Technology Session is a major first step in building a new relationship in the engineering fields of the three universities. Through the presentations about SDGs at the main session, we were able to recognize that Kagawa University are doing a wide range of research revolving SDGs. Regarding research between Kagawa University and National Chiayi University, we were able to exchange useful information on materials science based on the long-term exchange history. Regarding to Chiang Mai University, we have benefits to be able to share new research themes that will lead to future joint research in the fields of engineering and agriculture.

As for future plans, it is necessary to promote exchanges between National Chiayi University and Chiang Mai University continuously. In addition, since Chiang Mai University has many organizations related to the engineering field, it is necessary to build up a network for information sharing. For National Chiayi University, it is necessary to promote exchanges with other departments of the College of Science and Engineering.

Picture



Participants of Sustainability and Technology Session

【 Sustainability & Society Session 】



Sustainability & Society Session

Organizing Committee

Assoc. Prof. Pornchai Wisuttisak, Faculty of Law, Chiang Mai University (Head of Session)
Asst. Prof. Chanintorn Pensute, Faculty of Political Science and Public Administration, Chiang Mai University
Asst. Prof. Ora-orn Poocharoen, School of Public Policy, Chiang Mai University
Assoc. Prof. Aranya Siriphon, Faculty of Social Science, Chiang Mai University
Assoc. Prof. Ratchaneekorn Tongsookdee, Faculty of Education, Chiang Mai University
Prof. Kuo-Hung Huang, Department of E-learning Design and Management, National Chiayi University (Head of Session)
Prof. Ching-Ching Cheng, Department of Early Childhood Education, National Chiayi University
Prof. Juei-Hsin Wang, Graduate institute of Educational Administration and policy Development, National Chiayi University
Prof. Yumiko Takagi, Faculty of Education, Kagawa University (Head of Session)
Prof. Yoshiki Sakurai, Faculty of Education, Kagawa University
Prof. Takayoshi Sugita, Faculty of Education, Kagawa University
Prof. Toru Terao, Faculty of Education, Kagawa University
Prof. Atsushi Taira, Faculty of Education, Kagawa University
Prof. Eiichi Miyazaki, Faculty of Education, Kagawa University
Prof. Paul Batten, Faculty of Education, Kagawa University
Prof. Naoyuki Hara, Faculty of Economics, Kagawa University
Prof. Lrong Lim, International Office, Kagawa University
Assoc. Prof. Toru Takamizu, International Office, Kagawa University
Assoc. Prof. Mika Shioi, International Office, Kagawa University

Chairpersons

Assoc. Prof. Pornchai Wisuttisak, Chiang Mai University
Prof. Kuo-Hung Huang, National Chiayi University
Prof. Yumiko Takagi, Kagawa University

Program

Congratulatory message

Professor, Yoshiki Sakurai, Head International exchange committee, Faculty of Education, Kagawa University

Oral Presentation Program

※ KU: Kagawa University, CMU: Chiang Mai University, NCYU: National Chiayi University, GU: Gauhachi University, NEHU: North Eastern Hill University, JU: Jahangirnagar University

Thursday, 2nd September, 2021					
Sustainability & Society Session 1 14:05-15:45 Japan time	Chair Person: Yumiko Takagi (KU)				
	SS-1	JP: 14:05 TW: 13:05 TH: 12:05 IN: 10:35	KU	Naoyuki Hara	Introduction of Faculty of Economics and Tourism in Kagawa Prefecture
	SS-2	JP: 14:15 TW: 13:15 TH: 12:15 IN: 10:45	NCYU	Kuo-Hung Huang	A study of developing the educational robots course for pre-service teachers
	SS-3	JP: 14:25 TW: 13:25 TH: 12:25 IN: 10:55	CMU	Ratchaneekorn Tongsookdee	Using Social Stories to Modify Hitting Behaviors of an Early Childhood Student with at Risk of ADHD
	SS-4	JP: 14:35 TW: 13:35 TH: 12:35 IN: 11:05	KU	Eiichi Miyazaki	Development of elementary school programming materials to experience AI using Scratch and Raspberry Pi
	SS-5	JP: 14:45 TW: 13:45 TH: 12:45 IN: 11:15	NCYU	Ching-Ching Cheng Kuo-Hung Huang Yikai Lin	Facilitating Sustainable Development of Preschools: A National Project for Teacher Training
	SS-6	JP: 14:55 TW: 13:55 TH: 12:55 IN: 11:25	CMU	Chanintorn Pensute	So Close yet So Far (Inspired by Jimmy Liao), stories around our faculty
	SS-7	JP: 15:05 TW: 14:05 TH: 13:05 IN: 11:35	KU	Toru Takamizu Mika Shioi Lrong Lim	An Opportunity for Multicultural Students to Learn and Practice SDG 14
	SS-8	JP: 15:15 TW: 14:15 TH: 13:15 IN: 11:45	CMU	Aranya Siriphon	Social sciences Knowledge and SDGs contribution
	SS-9	JP: 15:25 TW: 14:25 TH: 13:25 IN: 11:55	NCYU	Juei-Hsin Wang	A Case study on the practice of remote education policy : Local government and rural school
SS-10	JP: 15:35 TW: 14:35 TH: 13:35 IN: 12:05	CMU	Ora-orn Poocharoen	Smart Sustainable Governance: A new paradigm for achieving SDGs through sound public policies	
Sustainability & Society Session 2 15:50-17:30 Japan time	Chair Person: Atsushi Taira (KU)				
	SS-11	JP: 15:50 TW: 14:50 TH: 13:50 IN: 12:20	KU	Takayoshi Sugita	English Literature and Meiji Japan
	SS-12	JP: 16:00 TW: 15:00 TH: 14:00 IN: 12:30	NCYU	Hsin Yi Tseng	Factors of Elementary School Teachers' Participation in Interdisciplinary Teaching in Taichung City
	SS-13	JP: 16:10 TW: 15:10 TH: 14:10 IN: 12:40	NCYU	Chao Ju Chen	Characteristic Libraries Evaluative Construction in Elementary Schools
	SS-14	JP: 16:20 TW: 15:20 TH: 14:20 IN: 12:50	KU	Toru Terao	Impact of the climate change and adaptation strategy in Asian countries
	SS-15	JP: 16:30 TW: 15:30 TH: 14:30 IN: 13:00	GU	Madhushree Das	Equitable Quality Education and Digital learning: How would Assam fare?
	SS-16	JP: 16:40 TW: 15:40 TH: 14:40 IN: 13:10	GU	Bimal Kumar Kar	Ensuring Water Security for Sustainable Development: Assessment of Availability and Utilization Dynamics of Water in Assam from SDG-6 Perspective
	SS-17	JP: 16:50 TW: 15:50 TH: 14:50 IN: 13:20	GU	Dhanjit Deka	Urban Planning in Context of Tourism Development: A Case Study of Gauhachi City, India
	SS-18	JP: 17:00 TW: 16:00 TH: 15:00 IN: 13:30	JU	A. T. M. Shakhawat Hossain	Risk Associated With Rohingya Refugee Settlements at Ukha Camp, Cox' sbazar, Bangladesh-A Threat for Sustainable Development
	SS-19	JP: 17:10 TW: 16:10 TH: 15:10 IN: 13:40	NEHU	Hiambok Jones Syiemlich	Scales of Hydrologic alternations : How to relieve water stress in areas of abundant water resources
SS-20	JP: 17:20 TW: 16:20 TH: 15:20 IN: 13:50	NCYU	Kuo-Hung Huang	Student collaborative research on climate change with open data	

Gratitude Message

Dr. Toru Terao, Professor, Faculty of Education, Kagawa University

Dr. Pornchai Wisutitsak, Associate Professor, Faculty of Law, Chiang Mai University

Dr. Kuo-Hung Huang, Professor, Dept. of E-learning Design and Management, National Chiayi University, Taiwan

Closing Remarks

Dr. Yumiko Takagi, Professor, Faculty of Education, Kagawa University

Summary of the session

As a result of their collaboration, Chiang Mai University, National Chiayi University, and Kagawa University were able to hold the tri-lateral symposium online for the first time. The Sustainability and Society Session was one of the satellite sessions and was held on September 2, 2021 from 14:00 to 17:30 Japan Standard Time using Zoom. This session was held together with the Faculty of Education, Faculty of Economics, Faculty of Law, and the Kagawa University International Office. Assoc. Prof. Ponchai from Chiang Mai University, Prof. Huang from National Chiayi University, and Prof. Takagi from Kagawa University organized the online symposium. This session consisted of two parts, the first moderated by Prof. Takagi, and the second part by Prof. Atsushi Taira. We exchanged diverse but common aspects of SDGs among many participants from different countries. In the latter, Indian and Bangladeshi university researchers were invited in addition to the three universities in light of the theme, SDGs. A total of 24 researchers made presentations. Insightful and interesting presentations were made from various fields and perspectives in Asia. Through this session, the possibility of further development of the connections in the future between the three, or more, universities was convinced. We, especially the Faculty of Education at Kagawa University would also like to invite a wide range of all professors to participate in these sessions as a way for all participants to deepen their insights in this field.

In order to start a joint research or student exchange, we need to understand the content of each other's research. The presentations of this year's symposium are mainly from educational perspectives, field studies, and climatological research on the SDGs.

Educational perspectives

Prof. Huang introduced the theoretical development, design and methods of the educational robots course for pre-service teachers. He finished his presentation with comments on possible future collaborations theorists and students. Prof. Tongsookdee introduced research of modifying hitting behaviours of an early childhood student with risk of ADHD by using social stories. This helps children understanding social norms and lead to appropriate communication with others. It is important to take prevention measures as early as possible. Prof. Miyazaki introduced the development of programming materials in elementary school. Emotional judgement and discrimination of the facial expression which can be expressed in Scratch and the Raspberry Pi has implications for future research. Prof. Cheng introduced a case study of facilitating sustainable development of preschools. Assoc. Prof. Sugita introduced the relation between English literature and Meiji era Japan. During the Meiji and Taisho eras, Japanese writers created new vocabularies to differentiate their styles from the works in the previous eras in order to protect the Japanese language and make a new form of novels. NCYU graduate student Ms. Tseng discussed the concept of interdisciplinary teaching, trends in foreign countries, and Taiwan's advocated interdisciplinary teaching. NCYU Graduate student Ms. Chen introduced evaluative indicators of characteristic libraries in elementary schools in Taiwan.

Field studies

Assoc. Prof. Shioi introduced the Project Sanuki, a collaborative effort between international and local students to identify local issues and consider how to resolve them. Assoc. Prof. Takamizu explained the project which includes collaboration of local government, NPOs, and staff from other KU faculties. Prof. Lrong Lim introduced the programme's focus on SDG-14, Life Under Water, in which students are assigned into groups and discuss various situations and then make proposals as to how to handle these situations. Achievements of the project include propagation of knowledge about SDGs, knowledge about the Seto Inland Sea area, as well as online environmental cleaning projects in Bhutan and Cambodia. Also, communication skill of students participated have been improved. Prof. Siriphon introduced the role of education and academic institutions in dissolving the conflicts between national park officers and local communities regarding natural resources. The output was then provided to local villagers in the format of maps indicating land use, and a booklet introducing the history of the village. Prof. Wang introduced rural education in Taiwan. Education in remote areas in Taiwan is related to the policy, structure and system of local government. Asst. Prof. Poocharoen introduced smart effective governance and education policy. The paradigm cited for trash can be applied to SDG goals such as vaccination and health care.

Climatological research on the SDGs

Prof. Terao introduced topics on SDGs and climate change, and his long-time collaborations with scholars from India, Nepal and Bangladesh on climate change. Visiting researchers have also been invited to conduct research at KU focusing on historical resources in Kagawa. Prof. Terao also introduced the grassroots movement to get illegally-dumped industrial waste removed from Teshima. Prof. Kar discussed the geographical context and factors favouring high potential of water resources in Assam. Assist. Prof. Deka explained urban planning in the context of tourism and trade in the development focusing on the city of Guwahati. Prof. Hossain introduced one of the world's largest refugee crises in recent years. Due to 'ethnic cleansing', more than one million Rohingya refugees have relocated to Bangladesh. Prof. Syiemlieh introduced his research on northeast India, the plateau of Meghalaya. Prof. Huang introduced student collaborative research. The presentation discussed the background, three case studies, and future prospect.

The possibilities for future joint research and promotion strategies

As a strategy to promote collaboration between the participating universities, the symposium acts to introduce various fields of research and find possible avenues for collaboration. As evidence to show the success of this session, a collaborative research plan has already been discussed and launched by Kagawa University and National Chiayi University. The project, titled "A Study on Comparison and Cooperation in ICT Education between Japan and Taiwan", will compare the characteristics of ICT education in Japan and Taiwan and then provide feedback to each other's educational environment. The goal is to realize higher quality ICT education in Japan and Taiwan. If this can be achieved, the expected results will contribute to SDG Goal 4: "Ensure inclusive and equitable quality education for all and promote lifelong learning opportunities". As a result of this

new collaboration between Kagawa University and National Chiayi University, it is expected that further research into innovative use of ICT will continue between the two universities.

This symposium enables researchers to connect with other researchers who share common research area at other universities. The research plan mentioned above was created in a surprisingly short period. This is due to the many years of joint research in various fields between the two universities. In order to promote international research, it is necessary to have partner universities which share common research interest. It is also essential to provide grants and funding for collaborated research project in order to support and motivate researchers.

This was the first time for many of the researchers from India and Bangladesh focusing on climatological research to join the Trilateral Symposium. A number of excellent research projects being conducted at Chiang Mai University were also introduced. The proceedings of the twenty-four researchers' presentations is the beginning of future collaboration. We are looking forward to having more collaborations involving various research fields.

The administrative staff at the Faculty of Education, Kagawa University had been taking the main responsibility in organizing the trilateral symposium by making contact with researchers and respective organizations. This symposium had provided an opportunity for the staff to be involved in coordinating international symposia between several Asian countries. In 2022, we hope the International Office at Kagawa University will keep supporting us in organizing the symposium.

Chairperson comments

Assoc. Prof. Pornchai Wisuttisak, Faculty of Law, Chiang Mai University

The symposium covered common research and community services among the three universities. Through the symposium, under the guidance of the scholars, students engaged in community activities and helped developing the communities. For example, the students from the faculties of political science, social science, and education of Chiang Mai University joined field works and helped with community development. The School of Public Policy, CMU also showed their research and works on governance to ensure the SDG development in Thailand.

Scholars from Kagawa University presented research and works on climate and social issues with possible solutions. Scholars from National Chiayi University (NCYU) highlighted the importance of field works for social development. There are also academicians from foreign universities who participated and presented topics on sustainable development. The webinar contributed to further understanding of SDG and social development.

The proposals for future cooperation are: 1) exchange students programs with the objectives to improve social and community development, 2) meetings to discuss university education system and social engagement, 3) exchange of policy and research on sustainable development focus on community services and 4) collaboration works on SDG among CMU, KU, NCYU and other universities.

Lastly, we would like to extend our heartfelt thanks and appreciation to all the participants of the First Trilateral Symposium on SDGs. We look forward to meeting all the participants at the next symposium in 2022.

Prof. Kuo-Hung Huang, Teachers' College, National Chiayi University

This trilateral symposium was a successful event to boost cooperation between KU, NCYU, and CMU. Twenty presentations of various themes illustrated the diversity and activeness of research efforts and achievement. Despite the wide range of research fields, presenters from 6 countries brought up many interesting viewpoints focusing on sustainability and society. Nowadays, joint research efforts across regions and disciplines are becoming prevalent. We believe this online symposium will strengthen the collaboration between participating universities and scholars.

Prof. Yumiko Takagi, Faculty of Education, Kagawa University

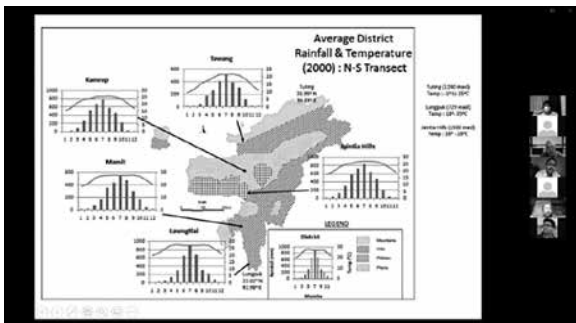
As a strategy to promote collaboration research between the participating universities, the symposium acts as a way to introduce the various interesting fields of research and find possible avenues for collaboration. As part of the evidence of the success of this session, a research proposal for collaborative research based on these sessions as already discussed and created by Kagawa University and National Chiayi University. Also, as a result of this new collaboration between all Universities it is expected that further research into innovative use of several SDGs topics will continue between the related institutes. The number of researchers who joined this Society session for the first time exceeded half of the total number of participants in this session. I sincerely hope that we can meet all of you in Takamatsu next September those who have deepened old friendships, those who were newcomers to this session, and those from other universities who unfortunately could not attend this year's symposium. I hope that we can make progress in various collaborate research projects.

Finally, let us all here at Kagawa University take this chance to extend our heartfelt thanks and appreciation to all the participants of the Second Trilateral Symposium on SDGs. We also express the wish to meet all the participants at the next symposium in 2022

Pictures



Color recognition Chasing game



Abstracts

Introduction of Faculty of Economics and Tourism in Kagawa Prefecture

Naoyuki HARA

Kagawa University, Japan

Faculty of Economics, my research theme and tourism in Kagawa prefecture are introduced. Here I'd like to introduce my research theme.

My research theme is rural development and tourism, eco-tourism and workcation. Rural tourism is a traveling style in which travelers stay in rural villages. They can experience a traditional Japanese rural lifestyle, interact with local people and experience a variety of attractive local settings and communities. They can buy agricultural products at farmers markets, eat local foods at farmers restaurants, experience many activities in the countryside, and stay at various types of accommodations, including farm stays. These contribute to vitalizing rural communities which suffer from depopulation and aging.

“Workcation” is a word that combines “work” with “vacation”. Business persons do remote work at tourism destinations while enjoying staying there. Due to the pandemic of Covid-19, inbound tourists disappeared from Japan and many destinations are suffering from the hard condition. Recently many of them pay attention to and try to introduce workcation because of recovery from disappearance of inbound tourists. Workcation is not only for the recovery from it, but also may create new business opportunities by business matching and open innovations between city business persons and local residents.

A study of developing the educational robots course for pre-service teachers

Kuo-Hung HUANG

National Chiayi University, Taiwan

In order to promote pre-service teacher professional abilities in teaching STEM with robots, the researcher design a new course of educational robot and investigate how students react and learning during this class.

The content of this course consists of three components, namely pedagogical knowledge (theoretical foundation related to robots), content knowledge and pedagogical content knowledge. The researcher, as the class lecture, used participating observation to study students' development.

Using Social Stories to Modify Hitting Behaviors of an Early Childhood Student with at Risk of ADHD

Ratchaneekorn TONGSOOKDEE, Pattaraporn SAELEE

Chiang Mai University, Thailand

This research study aimed to examine the learning strategy of using social stories to modify hitting behavior of an early childhood boy who was 6 year-old and at risk of ADHD. The research tools consisted of two social stories, two individualized education plans, Q&A exercises, and classroom behavior observation form. The data were collected in February 2021 and analyzed using frequency and means, then presented in tables and graphs with descriptive explanation.

The results showed that the mean rate of the case study hitting his friends in the classroom from baseline, during experiment, and follow-up were reduced, i.e., 4.5, 3.2 and 1, respectively. In addition, each social story was read 5 times in 5 different days and at the end of each reading, the case study was asked to answer 5 questions regarding the situation in the story. The results showed that the case study was able to answer all of the questions with an increasing in-depth details from the first to the fifth answer. The conclusion is that social stories can be powerful and effective learning strategies to facilitate young children change undesired behavior on their own under adult's supervision.

Development of elementary school programming materials to experience AI using Scratch and Raspberry Pi

Eiichi MIYAZAKI

Kagawa University, Japan

In this research, in order for elementary school students to experience AI, we developed a prototype of an emotion recognition program that uses Scratch and the Raspberry Pi to capture a person's face with a web camera and estimate their emotions in real time on the Raspberry Pi.

In this program, emotion recognition is done on the Raspberry Pi side, so it is not possible to train the AI itself. However, with this system, elementary school students can expect to actually experience AI and become aware of things that have been difficult for computers to learn (and difficult to describe with conventional programming), such as image recognition and voice recognition.

As a result, they will be able to think about how AI and humans can help each other, something that has not been done in conventional programming education, and think about the future that programming education aims for AI that can help humans do their jobs.

Facilitating Sustainable Development of Preschools: A National Project for Teacher Training

Ching-Ching CHENG, Kuo-Hung HUANG, Yikai LIN

National Chiayi University, Taiwan

Early Childhood Education and Care institutions are understood as learning organizations in a context of rapid global change. In addition to the external changes, such as government policy and education market, the internal issues including teachers' teaching capacity, values, attitudes and learning goals are crucial to educational practices. The purpose of this study is to assist the preschools to achieve sustainable development by providing PDCA training for teachers. Therefore, the training aim to help preschool staff and teachers to construct their own knowledge and culture for organizational growth and effective operation to achieve the program objectives by promoting the systematic thinking. Three stages of training programs, namely knowledge diffusion, knowledge adaptation, and support network, were designed and implemented in form of training lectures, workshops, and professional community.

Quantitative and qualitative methods are used to collect the research participants' perception and intention on these training. The results indicate that three kinds of training developed all are positively perceived by preschool teachers. From the response of the participants, the professional community and workshops are higher than the training lectures on overall satisfaction of the training, perception of usefulness for preschool work, and the willingness to adopt PDCA in work-related projects.

So Close yet So Far (Inspired by Jimmy Liao), stories around our faculty

Chanintorn PENSUTE

Chiang Mai University, Thailand

Faculty of Political Science and Public Administration aims is to support the SDGs. This presentation presents stories related to few stakeholders; students, staffs, and communities around Chiang Mai Universities.

An Opportunity for Multicultural Students to Learn and Practice SDG 14

Toru TAKAMIZU, Mika SHIOI, Lrong LIM

Kagawa University, Japan

The presenters will introduce a course called "Project Sanuki", which is a common subject in which students find social problems and foster problem solving abilities. Since 2020, the focus of the course has been on SDG 14 "Life below Water". The students are required to do a group work and each group is intended to have members of international and Japanese students. The international students are mainly exchange students and the Japanese students are mainly first year students. Each group can choose Japanese or English as a working language, depending on the abilities and preference. The presenters collaborated with Satoumi group, Kagawa prefecture and Archipelago, an NPO, as well as faculty members from other areas of study. The opportunities of special lectures were provided: they could learn the history, water environment administration

and problems of Seto Inland Sea that is adjacent to Kagawa prefecture. In addition, a fieldwork was planned and the students were supposed to observe and collect debris at beaches in Kagawa, and classify them based on ICC data card. However, it was cancelled due to COVID-19 and other reasons. The students could learn knowledge on SDGs and the sea, and have practical academic communication with each other.

Social sciences Knowledge and SDGs contribution

Aranya SIRIPHON

Chiang Mai University, Thailand

The Thai military government's repatriation of forest policy (2014-2018) and the recently-implemented new National Park law are being enforced currently. Villagers who had lived in mountainous areas for more than 60 years before the law was applied were restricted from using natural resources, farming in the forest, collecting firewood and mushrooms and were charged with trespassing, and ordered to leave.

Upon a request from the head of Muang Kham, a mountainous village near Chiang Mai with a history of 200 years, the CMU Faculty of Social Sciences started to provide support in negotiations between the village and the National Park Department. At the same time, the faculty provided the residents of the district with knowledge of social sciences. The two aims of the project were to utilise Social Science Knowledge to help solve conflicts and to combine the two missions of student teaching and academic service, allowing students to participate in assisting marginal people. Students conducted behavioural surveys combining geography, sociology, and anthropological methods, and the faculty played a role in supporting vulnerable groups.

The practices were as follows: 1) meetings were held with the National Park Department, students, and locals; 2) they were then divided into a geography team, and a sociology and anthropology team, to establish methods for gathering information and resource management; and 3), as an output method for local villagers and executives, GIS maps are then used to clarify the boundaries between land and forests, protect the cultural resources of the indigenous people, and support sustainable economic activities.

A Case study on the practice of remote education policy:

Local government and rural school

Juei-Hsin WANG

National Chiayi University, Taiwan

According to the core values of the 12 years of basic national education in Taiwan, the various educational policies and local education policies are in the process. The local government and school leaders need to innovative operations to achieve the implementation of remote education

policy. Based on this, this micro-study is focus on the case local government and the rural school practice. By using interviewing and document analysis, the research aimed to analyze the practice of local government and the case school in terms of the five dimensions: Policy characteristics, structure and system, local government and school leadership, the influence of remote education policy interpretation, feedback on the quality of local and school education.

The findings of the research are mentioned as the following:

1. Although the implementation of relevant remote education policies, it seems that there is protection by relevant laws and regulations, but the education situation cannot solve the dilemma in accordance with the law.
2. Only a small number of rural schools are formal teachers, and most of them are acting teachers or substitute teachers.
3. In rural schools, since many students come from disadvantaged families, the ability of students to learn independently is an opportunity to improve their learning ability in rural areas.
4. Rural schools need the support of internal and external resources of the local government to survive and develop the characteristics of the school.
5. The local education authorities and rural schools need to support teachers to continue teacher professional development in a harmonious 'learning and teaching' environment.

Based on the findings mentioned above, the research offered many implied applications for reference.

**Smart Sustainable Governance:
A new paradigm for achieving SDGs through sound public policies**

Ora-orn POOCHAROEN

Chiang Mai University, Thailand

Effective accountability and inclusiveness are the pillars of SDGs. There is a framework to consider paradigm shifts in public administration from 'ancient public admin' to 'smart sustainable governance.' This includes a shift from citizens being 'commoners' to the 'public', and an inclusive shift from the public not only being citizens but also to include those such as refugees and expats. As an example of such a paradigm shift, trash collection was cited. The first paradigm used obedience and loyalty, respect for elders, and for the nation. The second used laws, fines; the third used the market and competitive style with customers as its focus. The fourth viewed trash as a commodity in which the user pays for collection. The fifth focused on community group management and sustainable governance and a focus on planetary health, to lead to sustainability. The paradigm cited for trash can also be applied to such SDG goals such as vaccination and healthcare programmes.

English Literature and Meiji Japan

Takayoshi SUGITA

Kagawa University, Japan

In early years of Meiji period, many English literary works gave Japanese writers a great shock. For them, not only did the foreign literature (and language) threaten Japanese own literature (and language) , but also it was one of the models to write their 'new' novels, which were different from stories written in the Edo era. From this point of view, the plays of William Shakespeare and the novels of Walter Scott and Bulwer Lytton were widely read, and works of Charles Dickens, one of the greatest English novelists in 19th century, had also been frequently translated and/or adapted since 1882.

This presentation explores and historicizes the central significance of Dickens's acceptance in 19th and early 20th century Japan. There are two major writers in Meiji period, who are especially interested in English literature: Tsubouchi Shoyo and Natsume Soseki. Both of them referred to Dickens' works, but, as a matter of course, their receptions of are slightly different each other. So, we will be considering the differences between the two by reading works of Shoyo and Soseki.

**Factors of Elementary School Teachers' Participation
in Interdisciplinary Teaching in Taichung City**

Hsin Yi TSENG

National Chiayi University, Taiwan

At present, Taiwan is promoting the twelve-year Basic education curriculum, emphasizing cross-field and interdisciplinary curriculum development, focusing on topics, experience, exploration, practice, performance, and utilization. It is expected that students will have key literacy abilities and have integrated learning experience; therefore, interdisciplinary teaching allows students to integrate the knowledge concepts of the learning content, and use multiple teaching and learning methods to stimulate students' motivation, so that they can classify and connect when facing problems in different life situations. The learning content of the subject area can effectively solve the problems in life, and then deepen and enrich self-learning. The knowledge, attitudes and skills learned in life can produce good learning transfer experience. The twelve years Basic education emphasizes the core spirit of students. This research is mainly to understand the background of teachers in elementary schools in Taichung City in interdisciplinary teaching, the reasons for their participation, and the current status of cross-disciplinary implementation.

The method of this research adopts the questionnaire survey method, and the data analysis adopts the SPSS statistical software. According to the statistical results from the t test and ANOVA test, we provide conclusions of this article, and future research suggestions based on the findings of the research results.

Characteristic Libraries Evaluative Construction in Elementary School

Chao Ju CHEN

National Chiayi University, Taiwan

For developing characteristic libraries, promoting the functions of education, advocating children reading cultivation and learning abilities, this thesis carries on designing evaluative indicators and assists in finding problem and resolving. The research contains literature review and case analysis to construct the management of services and characteristic concepts. As well, characteristic collection and distinctive atmosphere are organized into evaluative indicators of characteristic library analysis standards.

Interview the teachers of elementary school by what their point of view in evaluative indicators of characteristic libraries and their perspective of characteristic libraries nowadays. Through IPA (Importance-Performance-Analysis) analysis, investigate and discover the developments and adjustments for characteristic libraries in Taiwan.

Key Words: mixed methods research, Characteristic Libraries, Special Libraries, IPA analysis.

Impact of the climate change and adaptation strategy in Asian countries

Toru TERAU, Satoshi MURAYAMA

Kagawa University, Japan

Asian countries are highly vulnerable to the climate change due to the global warming in different perspectives such as agriculture, water resources and natural disasters. To mitigate and adapt to these impacts on the people living in the region of the monsoon Asia, it is highly important to project future climate change scenarios in these countries. However, due to the complex topography and highly non-linear interaction between the land surface processes and the hydroclimatological aspects of the hydrosphere and the atmosphere, the understanding of the climate change impact is not accurate enough. The action to combat the impact of climate change is one of the important goals of the SDGs, having important interlinks to other SDGs. In this presentation, we will show the hydroclimatological niche of the countries in the monsoon Asia using climatological parameters. We will present key understanding of the current climate science on the status and future projection of the climate change in this area. And we will promote discussion on the different phenomena due to the climate change and different adaptation strategies in different countries.

Equitable Quality Education and Digital learning: How would Assam fare?

Madhushree DAS, Syeda FAHIMA, Shahnaz SULTANA, Chandan BHUYAN

Gauhati University, India

The Sustainable Development Goal 4 is to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all; but hit by the pandemic and the subsequent shift to remote teaching-learning mode, the goal became more difficult to be achieved in the developing and least developed countries. India has shown a decreasing score in Goal 4 in the Sustainable Development Report 2020 with some challenges still remaining. Assam, one of the eight North-eastern states of India, has a shrinking score in the SDG India Index 2020-21 as compared to the previous SDG India Index 2018 and 2019. Of the eleven national level indicators identified to achieve six out of ten SDG 4 targets for 2030, Assam has performed relatively better only in three indicators and with an Index score of 43, the state occupies 24th rank of the 28 states considered. An online survey conducted by the researchers in 2020 to comprehend the problems and prospects of digital education highlighted unequal digital inclusivity. The study will draw upon past studies as-well-as the current digital accessibility of education in the state and investigate how Assam would fare in SDG 4 in 2021-22 based on both primary and secondary data.

Ensuring Water Security for Sustainable Development: Assessment of Availability and Utilization Dynamics of Water in Assam from SDG-6 Perspective

**Bimal Kumar KAR, Bharati HAZARIKA
Gauhati University, India**

Water being one of the most essential elements for survival of human beings, ensuring water security has become a prime concern for any sustainable development initiative. Although water is a renewable resource with huge global reserve, the fresh water necessary for human use is highly limited. India's potential water resources from surface (rivers) and underground sources is currently 1869.35 BCM (Billion cubic meter) and 431.86 BCM respectively, while its corresponding utilizable capacities are 690.1 BCM and 392.70 BCM. So far Assam is concerned, despite its considerably high water resource potential, it has not been utilized efficiently for agricultural and domestic purposes. Moreover, its utilization level varies spatially from one district to another depending on variation in terrain condition, cropping pattern and other economic activities. The level of utilization of ground water for agricultural and domestic purpose has also been quite insignificant in the state as compared to many other states of the country excluding the north-east region. The present paper attempts to assess the level of water availability and to examine its utilization dynamics in spatio-temporal contexts in Assam in the light of SDG-6 based on secondary data from various reliable sources.

Urban Planning in Context of Tourism Development: A Case Study of Gauhachi City, India

Dhanjit DEKA, Madhushree DAS

Gauhati University, India

Tourism is an economic as well as industrial activity in which many individuals, firms, corporations, organizations and associations are involved. The industry is generally known as “smokeless” and “ecofriendly” industry because instead of goods it generates services for customers. It is also considered as an important industry for the all-round development of a place or a region. Therefore, there is an umpteen need to develop various sectors related to tourism industry to provide the best possible services and satisfactions to the tourists. Guwahati being the capital city of Assam and the Gateway of NE India has a great prospect for tourism to develop, as the city is full of several tourist destinations in and around it which bears lots of importance throughout the nation. In spite of many potentialities, due to poor infrastructural and allied other tourism related services and facilities, lack of proper marketing and lack of proper coordinated efforts tourism development in the city has not been able to take the pace as compared to other industries. The present study is an attempt to analyse the current status and need of the sustainable urban planning and management to support the growth and development of tourism industry in Guwahati city, India.

**Risk Associated With Rohingya Refugee Settlements at Ukhia Camp, Cox’sbazar,
Bangladesh-A Threat for Sustainable Development**

**Hossain ATMS., Jafrin, S.J., Dutta, T. I, Khan, P. A.I. Haque, M.E.,
Sayem, M.H.,Imam, H.& Khatun, M.**

Jahangirnagar University, Bangladesh

The humanitarian crisis due to ethnic cleansing Of Rohingya citizens from Myanmar to Bangladesh since 2017 has been creating a major environmental crisis for Bangladesh. Due to this cleansing more than one million people have fled from Myanmar to Ukhia, Teknaf, Cox’sbazar area Bangladesh. These refugees have been forced to build temporary shelters on the steep, deforested slopes of sand and clay hills of Kutupalong –Balukhali camps of Ukhia, Cox’sbazar. Thousands of hand-built tarpaulin (heavy-waterproof sheet used as a covering) and bamboo shelters on hill slopes are threatened by slope failures, slumping, sliding, strong winds, rains and cyclones during monsoon season. This low cost adaptation system with water proof sheets for Rohingya refugees housing helping to survive more than half million refugees in the camp area during monsoon in a unsustainable way of living (without light and air passing facilities) in addition to the risk of slope failure and earthquake induced liquefaction.

From the numerical stability & liquefaction analyses at different earthquake magnitudes suggest that these hills are at high risk and are not suitable for sustainable community based living in the camp area. At higher earthquake magnitudes (M= 5 or above) these soils are susceptible

to liquefy up to a depth of 5 m. An integrated rainwater harvesting system with other sustainable solutions are recommended to reduce the risks. Proper measures must be taken immediately by the concerned authorities for alternate sustainable housing and to relocate the refugees in a safer land.

**Scales of Hydrologic alternations:
How to relieve water stress in areas of abundant water resources**

Hiambok Jones SYIEMLIH

North Eastern Hill University, India

Hydrologic alternation is a feature in areas with seasonal drought like conditions across the globe. The areas just outside the influence of the Equatorial convective system experience a sequence of wet and dry periods in each calendar year. One such area in focus is the southern part of Meghalaya which receives a huge volume of rain each year yet water resources dwindle almost immediately after the rains cease.

The SDGs aim at a successful and equitable distribution of resources to the global population with an expectation to provide adequate amenities but the forces of nature exerts a negative role. Considering the efforts of reaching each household with reasonable amount of water, the unrelenting natural phenomenon may negatively outweigh human efforts.

Each year in this area there is an alternation of dry and wet period. The length of the dry period varies from year to year ranging from 2 months to 4 months starting from around November. The hydrological conditions over the area allows very less water retention and hence, sources of water run dry immediately as the rainfall ends. When the dry period is longer, the areas face a huge water stress. Paleoclimate studies have indicated extreme climate changes in these areas and the scale of such changes may even touch several years c.f. the Mega drought around 4000 years BP, affected almost the entire planet. Beyond this there were periods of extreme precipitation which must have brought unimaginable amounts of rainfall and may cause havoc. It is therefore a great need to understand different scales of hydrologic alternations occurring in this area while trying to achieve the SDGs.

Student collaborative research on climate change with open data

Kuo-Hung HUANG

National Chiayi University, Taiwan

A number of prior studies implied that climate change education would change students' awareness on the environment issues, instead of their behavior. Also, many studies suggested that students' hands-on experiences would change their attitude toward science. Therefore, in order to promote students' knowledge and attitude toward the issue of climate change, a collaborative research on climate change by college students with on-line data including GIS, satellite images,

and open data is proposed. By holding workshop, implementing project, and sharing research findings for students, this cooperation will help to enhance their perception on climate change.

【 Sustainability & Health Session 】



Sustainability & Health Session

Organizing Committee

Dr. Tippawan Prapamontol, Research Institute of Health Sciences, Chiang Mai University (Head of Session)

Dr. Ajaree Rayanakorn, Faculty of Public Health, Chiang Mai University

Dr. Surat Hongsibsong, Research Institute for Health Sciences, Chiang Mai University

Prof. Ruey-Shyang Chen, College of Life Sciences, National Chiayi University

Prof. Hsin-I Chang, College of Life Sciences, National Chiayi University (Head of Session)

Prof. Kenji Wada, Department of Chemistry for Medicine, Faculty of Medicine, Kagawa University (Head of Session)

Asst. Prof. Hiromi Suzuki, Department of Hygiene, Faculty of Medicine, Kagawa University

Chairpersons

Dr. Tippawan Prapamontol, Research Institute of Health Sciences, Chiang Mai University

Prof. Hsin-I Chang, College of Life Sciences, National Chiayi University

Prof. Kenji Wada, Department of Chemistry for Medicine, Faculty of Medicine, Kagawa University

Asst. Prof. Hiromi Suzuki, Department of Hygiene, Faculty of Medicine, Kagawa University

Program

Date: September 6, 2021 Time: 15:00 – 18:05 (Japan Standard Time)

15:00 (JST) 14:00 (CST) 13:00 (ICT)	Organizers	Opening (including photo-session) Prof. Kenji Wada, Department of Chemistry for Medicine, Faculty of Medicine, KU Prof. Ruey-Shyang Chen, Dean of Life Sciences, NCYU Prof. Hsin-I Chang, Faculty of Life Sciences, NCYU Dr. Tippawan Prapamontol, Research Institute of Health Sciences, CMU Dr. Hiromi Suzuki, Faculty of Medicine, KU Photo session
15:10 (JST) 14:10 (CST) 13:10 (ICT)	Prof. Chiyori Haga (KU)	Adiposity rebound may be a predictive index of body size for adolescents, based on retrospective cohort data in a Japanese rural area
15:35 (JST) 14:35 (CST) 13:35 (ICT)	Dr. Ajaree Rayanakorn (CMU)	Burden of disease and productivity impact of <i>Streptococcus suis</i> infection in Thailand
16:00 (JST) 15:00 (CST) 14:00 (ICT)	Prof. Hsuan-Wien Chen (NCYU)	Invasion and infection: On parasites of invasive animals

16:25 (JST) 15:25 (CST) 14:25 (ICT)		(10 min break)
16:35 (JST) 15:35 (CST) 14:35 (ICT)	Dr. Surat Hongsihsong (CMU)	Production and application of immunoassay for chemical exposures in occupational health: studies in northern part of Thailand
17:00 (JST) 16:00 (CST) 15:00 (ICT)	Prof. Jui-Chieh Chen (NCYU)	Propofol induces apoptosis and ameliorates 5-fluorouracil resistance in OSCC cells by reducing expression and secretion of amphiregulin
17:25 (JST) 16:25 (CST) 15:25 (ICT)	Prof. Yoko Matsuda (KU)	Age-related pathological changes and telomeres in the pancreas
17:50 (JST) 16:50 (CST) 15:50 (ICT)	Organizers	Closing

Summary of the session

Kagawa University hosted the 1st Trilateral Symposium on SDGs 2021 held from August 31 (Tuesday) to September 22 (Wednesday), 2021. This symposium was originally scheduled last year, but due to the COVID-19 pandemic, the face-to-face symposium was postponed until next September. We recognized, however, the necessity to have an opportunity for deepening cooperation among three universities, and the first symposium was held online in 2021. In addition to the main session, this symposium consisted of four sessions: Sustainability & Food, Sustainability & Technology, Sustainability & Society, and Sustainability & Health, and a three-day student session. Each session was held on a staggered basis. A total of about 400 faculty members and students from three universities and related ones participated in lively discussions.

The Faculty of Medicine, Kagawa University hosted the Sustainability & Health session. The session held using Zoom from 15:00 to 18:05 (JST) on September 6th (Monday) was organized by Dr. Tippawan Prapamontol (Institute of Health Sciences, Chiang Mai University), Prof. Hsin-I Chang (Faculty of Life Sciences, National Chiayi University), Asst. Prof. Hiromi Suzuki (Department of Hygiene, Faculty of Medicine, Kagawa University), and Prof. Kenji Wada (Department of Chemistry for Medicine, Faculty of Medicine, Kagawa University). A total of 70 members joined this session. Six distinguished lectures were invited, that was two for each university. The major objectives for this symposium were not only exchanging research results but also developing the international joint research collaborations. Therefore, young and excellent researchers who were looking for international collaborators: Prof. Chiyori Haga (School of Nursing) and Prof. Yoko Matsuda (Department of Oncology-Pathology) from the Faculty of Medicine, Kagawa University were selected. The session program is shown on the next page.

After a brief explanation of the session by Prof. Wada, Prof. Ruey-Shyang Chen, from National Chiayi University, gave a greeting speech. Then, all organizers introduced themselves. Following the photo session, six invited professors presented their lectures with extremely interesting

latest achievements, especially in the question-and-answer session, we focused on how to expand these achievements to other Asian countries and/or the rest of the world. The discussion was very lively, and sometimes continued beyond the time limit. I believe that many participants see the possibility of joint research works through such exciting discussions. After six lectures, the organizers summarized the session and concluded that the presented would lead to collaborative research works in the near future. The organizers will make arrangements among researchers who wish to collaborate with each other.

Finally, we promised to hold the 2nd symposium face-to-face in Kagawa next year. We would like to express our deep gratitude to everyone who supported this session.

Chairperson comments

Dr. Tippawan Prapamontol, Institute of Health Sciences, Chiang Mai University

It is time to reconnect activities among the tri-universities. Although the first tri-lateral symposium was held online, however, it did stimulate our common research interest in health issues, such as obesity, zoonotic diseases, and telomere issue. Faculty members and students of the three universities should make co-supervision of graduate student's thesis and research collaboration possible.

Prof. Hsin-I Chang, Faculty of Life Sciences, National Chiayi University

This Satellite Online Session invited 6 lecturers from KU, CMU and NCYU to share their research in the session of "Sustainability & Health". In College of life Sciences, NCYU, Asst. Prof. Hsuan-Wien Chen and Jui-Chieh Chen from College of life Sciences, NCYU were invited to share their works with other researchers from the three universities. The presentation topic of Asst. Prof. Hsuan-Wien Chen from the Department of Biological Resources is "Invasion and infection: On parasites of invasive animals. The presentation topic of Asst. Prof. Jui-Chieh Chen from the department of Biochemical Sciences and Technology is "Propofol induces apoptosis and ameliorates 5-fluorouracil resistance in OSCC cells by reducing expression and secretion of amphiregulin". For Dr. Hsuan-Wien Chen, he would like to find an opportunity to investigate and compare the parasites of invasive animals among Japan, Thailand and Taiwan. For Dr. Jui-Chieh Chen, it was his first time to share his research work at online international symposium during COVID-19 pandemic.

During this online Satellite Session, the participants joined in discussions on Sustainable Development Goals (SDGs) adopted by the United Nations (UN), particularly focused on goals such as Good Health and Well-being, Life Below Water and Life On Land. Substantial exchanges have been consistent among three universities. Prof. Ruey-Shyang Chen, Dean of the College of Life Sciences, mentioned that the aim of this online Satellite Session has provided a platform among three universities to have international research cooperation during COVID-19 pandemic. After this symposium, academic staffs and students can work out for research cooperation or exchange programs. At the end of the session, Prof. Kenji Wada, Faculty of Medicine, KU, invited all participants to join 2022 Trilateral Symposium in KU face-to-face.

Prof. Kenji Wada, Department of Chemistry for Medicine, Faculty of Medicine, Kagawa University

We sincerely appreciate the six invited lecturers for their stimulus talks. The discussion in this session was fruitful, and this would be an excellent trigger to initiate international collaborative works. I believe that many participants might have ideas about collaboration. All three universities will strongly support them, and all organizers of this session will be willing to make suitable arrangements for them. Kagawa University provides a small startup fund for such collaborative works at the initial stage, and soon after this session, collaborative work in the nursing area started.

We are looking forward to having this kind of opportunity again in Kagawa next year, hopefully in face-to-face mode.

Pictures



Abstracts

Note that Prof. Matsuda, Prof. Chen, and Prof. Surat have approved the publication of their abstracts in KUJO journal. Abstracts of others are not included.

Invasion and Infection: On Parasites of Invasive Animals

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I. Abstract

Being one of the most active trading and transportation hubs around the world, the East and Southeast Asia represents a unique model for study biological invasion. In particular, the island chains along the indo-pacific rims, from Japanese archipelago, Okinawa Islands, Taiwan, Philippines then to Indonesia, are not only the hot spots of biodiversity but also focal areas of highly threatened by the biological invasions. Nevertheless, the invasive alien animals didn't invade along by themselves, they often came with co-invaders, such as symbiotic/pathogenic microbes or parasitic worms. Herein, I provided cases of alien animals that originated from different continents and invaded to Taiwan as an example to investigate their parasitic infections during the invasion processes. We then compared the parasites of these animals in the invaded areas with those in their native areas. Based on these comparisons, the hypothesized emery released, spill-over, spill-back as well as the dilution effect resulted from species invasions and their impacts on infection dynamics can be illustrated.

II. Results & Discussion

Invasive animals, green iguana (*Iguana iguana*) and striped snakehead (*Channa striata*), have been caught attentions in recent years in Taiwan. These spectacular animals were introduced into Taiwan in past few decades due to different purposes. Green iguana is originated from central America and was introduced as pet animals after 2000, then become invasive in wild around 2010 in southern Taiwan. Since 2018, we have been collecting removal iguanas from different locations to study their parasites. Our study shown >90% of wild population of green iguana, with one exception, were heavily loaded with parasitic infections. The infection intensity ranged from hundreds to hundred thousand. All parasites founded in green iguana were new to local fauna and were obvious co-introduced with their iguana hosts from various sources.

In contrast to green iguana, the striped snakehead is widely distributed in southeastern Asia, including Indo-China, Malay Peninsula and Sundaland. It was introduced into Taiwan for aquaculture purpose in 1980s and became the most dominant aquatic animals nowadays in lowland freshwater ecosystems. In addition to its high fecundity and tolerance to hypoxia environment, the success of striped snakehead in Taiwan may also be contributed from human transportation among different watersheds. Our genetic study suggested the striped snakehead was introduced

one time and then experience rapid expansion. The parasitological survey for striped snakehead in Taiwan and Thailand revealed strong parasite-host clade associations between *Pallisentis* acanthocephalan and the striped snakehead, but not for *Camallanus* nematode.

III. Conclusion

Our studies had shown the biological invasion of alien animals often came with co-invaders. The symbiotic/pathogenic microbes or parasitic worms may cause potential biohazards similar to their host. It is equally important to investigate invasion species itself and its infectious agents.

The alien species invasion is one of the biggest threat to the nature life and biodiversity. By definition, species invasion is a cross-boundary issue. To solve this issue and to reach the UN SDGs 14 & 15, that demanded the protection of life below water and on land, requires the cooperation between and among nations.

While our colloquia "Sustainability & Health" is mainly concerning human health and well-being, here we highlight the importance of an integral approach to safeguard biodiversity as the fundament for human health, well-being and sustainability.

Production and Application of Immunoassay for Chemical Exposures in Occupational Health: Studies in Northern Part of Thailand

Surat Hongsibsong,

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I. Abstract

This topic describes some of the work on developing and applying immunoassay approaches for detecting agricultural used chemicals, i.e., parent compounds of pesticides, metabolites, and biomarkers of effect from exposure. The immunoassays for agricultural used chemicals were developed. A hapten was crucial in mimicking the target chemical conjugated to a protein carrier to raise antibodies (immunogen). Immunogens were used for immunizing animal immune system to raise antibodies. The specific antibody was used for immunoassay development. Most of the immunoassay types commonly applied to analyzing pesticides and other chemicals were competitive immunoassays. The developed immunoassays were used for detecting agricultural products and biological samples from farm and non-farm workers in Northern Thailand.

II. Results & Discussion

The developed immunoassays were validated against the standard method such as the chromatographic-based method by the limit of detection (LoD), the limit of quantitation (LoQ), precision, and accuracy. The results show in table 1.

Table 1. Laboratory parameters, samples, detection, and concentration of detected compounds by the developed immunoassay

	LoD (ppb)	LoQ (ppb)	Precision (%CV)	Recovery (%)	Samples	Detection (%)	Concentration (ppb)	Ref.
Chlorpyrifos	0.26	0.40-41.8	4.6-6.7	95.3-118	Vegetable (n=160)	33.8	35.3 ± 58.4	[1]
DDE	3.50	10.5	5.7-10.4	88.8-117	Milk (n=245)	86.1	108.8 ± 224.1	[2]
3-PBA	0.63	1.26	1.34-11.1	88.4-120	Urine (n=50+50)	24 28	1.05 ± 24.2 (Consumers) 0.73 ± 10.2 (Farmers)	[3]
	0.86	1.72	0.70-8.57	85.6-143	Plasma (n=50+50)	15 14	2.68 ± 4.31 (Consumers) 0.35 ± 0.54 (Farmers)	
ABI-42	16.83		-	-	Urine (n=128)	Non-detect	-	[4]

The laboratory parameter of the developed immunoassay was similar to chromatographic-based methods and could be used for detecting in real samples. Currently, several studies indicate that immunoassay can be used to analyze agricultural products and biological samples after solvent extraction. The developed immunoassay is very useful for analyzing large sample size: it is a simple process and can be done rapidly. The chromatographic-based methods used 50 min per sample (one run), while immunoassay can analyze 50 samples in approximately 4 h. The

immunoassay exhibited good accuracy and reproducibility, and it is ideally suited as a fast, high sample-throughput, and low-cost screening test before chromatographic analysis for confirmation.

III. Conclusion

In-house developed immunoassay can be used for detecting agricultural product and biological samples. It is considered to be an easy and inexpensive method for monitoring and epidemiological study.

IV. References

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Age-related pathological changes and telomeres in the pancreas

Yoko Matsuda,

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Faculty of Medicine, Kagawa University,

matsuda.yoko@kagawa-u.ac.jp

Age-related pancreatic dysfunction is associated with atrophy of the pancreas and a decreased number of pancreatic exocrine and endocrine cells. Aging induces various diseases such as diabetes mellitus and pancreatic cancer; therefore, age-related pancreatic changes are important for healthy life expectancy. We have analyzed age-related pathological changes using elderly Japanese autopsied samples. The aging pancreas showed various pathological changes such as pancreatic fatty replacement, lobulocentric pancreatic atrophy, pancreatic duct ectasia, and metaplasia of pancreatic exocrine cells, as well as changes in islet cells. Furthermore, the aging pancreas often harbors precancerous lesions such as pancreatic intraepithelial neoplasia (PanIN) and cysts. The incidence of PanIN increased according to age and approximately 80% of elderly samples had PanINs. Carcinoma *in situ* (PanIN-3) was more frequently identified in patients with diabetes mellitus and/or older age. Pancreatic cysts with high-grade dysplasia arose in the pancreata of older patients with larger numbers of cysts. The incidence of pancreatic cancer in autopsy cases was 2%. Approximately 8% of pancreatic invasive ductal adenocarcinomas progressed asymptotically and were discovered incidentally at autopsy. Occult cancer incidence increased with age. To clarify the molecular mechanisms of age-related changes of the pancreas, I analyzed telomere length by fluorescence *in situ* hybridization (FISH). The rate of decline in telomere length due to age was greater in duct and centroacinar cells than in acinar cells. The fact that the maximum regression of telomeres was found in duct and centroacinar cells suggests that the number of tissue stem cells with the longest telomeres decreases with age. Telomere length was the shortest in carcinomas, followed by PanIN-3, PanIN-2, PanIN-1, and duct epithelium. The telomere length in centroacinar cells and duct epithelium was shorter in cases of carcinomas or PanINs than in age-matched controls, suggesting that telomere shortening occurs despite the absence of histological changes. The incidence of abnormal mitosis, which is a pathological marker of chromosomal instability, showed a negative correlation with telomere length. In conclusion, age-related pathological changes play a key role in pancreatic carcinogenesis via telomere dysfunction in pancreatic stem cells. Further studies are warranted to clarify the molecular mechanisms of pancreatic carcinogenesis in elderly patients.

Reference: Matsuda Y. Age-related morphological changes in the pancreas and their association with pancreatic carcinogenesis. *Pathol Int.* 2019 69 (8):450-462. Review.

【 Student Session 】



Student Session

1st Trilateral Symposium on SDGs

Program

JST	Event	Details
1st Sept. 2021 (Wed) 17:30- 18:30	Sub-session 1	Welcome remarks by VP Prof. Masaaki Tokuda, KU 'Getting to know you' session Selection of SDGs theme for discussion & presentation.
8th Sept. 2021 (Wed) 15:30-17:30	Sub-session 2	Team leaders and Co-leaders take initiative and lead in discussions, job distribution, PPT preparation, etc. Supervisors offer advice, comments, etc.
22nd Sept. 2021 (Wed) 15:30-17:30	Sub-session 3	Opening remarks by VP Prof. Chu Chishih, NCYU Team 1 presentation (15:35-15:50) Team 2 presentation (15:50-16:05) Team 3 presentation (16:05-16:20) Team 4 presentation (16:20-16:35) Team 5 presentation (16:35-16:50) Q&A, discussions (16:50-17:20) Closing remarks by VP Prof. Rome Chiranukrom, CMU

Namelist of all team members

Team #	Student name	Univ	Faculty	status	Supervisor & Coordinators	Theme and Team name
1	Jiratchaya Duangpoch	CMU	Science	U3	Prof. Dr. Lrong Lim, Marine Environment Cleaning (MC) Assoc. Prof. Mika Shioi, Japanese Language Asst. Prof. Dr. Benjamas Suksatit (Nursing) Ms. Sabrina Concas (BNA) International Relations Division	#3 Good health & well being Team name: Quack Quack Team
1	Chakkrapop Lapimol	CMU	Science	U2		
1	Jidarat Lakleam CL	CMU	Education	U1		
1	Chanyapa Wachaihanawong L	CMU	ICDI	U3		
1	Chanida Kaewpluk	CMU	Nursing	U3		
1	Kai-Ling Hung	NCYU	Education	U3		
1	Yi-Chieh Chen	NCYU	Education	M2		
1	John Huang	NCYU	Life Sciences	M2		
1	Chien Peng, Wu	NCYU	Engineering	M2		
1	Han Ting Hsu	NCYU	Agriculture	U3		
1	Yumi Miyashita CL	KU	Medicine	U1		
1	Kentaro Tanaka	KU	Engineering	U4		
1	Wu Lin Xuan	KU	Medicine	D2		
2	Teerapat Kongrit	CMU	Science	U3		
2	Chadarat Silatham	CMU	Science	U2		
2	Songfa Aidan Maxwell L	CMU	Architec	U3		
2	Chonnipa Thanakiatsakul CL	CMU	Dentistry	U1		
2	Patnaree Tapanya	CMU	Nursing	U3		
2	Min Chi Tu	NCYU	Agricluture	U5		
2	Liang Chun Chen	NCYU	Agricluture	M3		
2	Chou Ching Chieh	NCYU	Management	M2		
2	Yi Jing Wu	NCYU	Science & Engineering	U4		
2	Edward Sogo Lutes	KU	Agriculture	U1		
2	Li Xiao Dong CL	KU	Medicine	D1		
2	Hanae Urayama	KU	Education (Graduated)	-		
3	Pichparnee Boonpradab	CMU	Science	U3	Visiting Prof. Yoshihisa Onoe, JICA Expert (MC) Dr. Pimporn Anataworasakul (Chemistry) Mrs. Wiranya Ratnapinda (Lin) International College of Digital Innovation Prof. Jo-Szu (Ross) Tsai / Department of Biological Resources / Fields: Avian Ecology, Species Distribution and Monitoring, Wildlife Habitat and Management, Plant Animal Interaction, Landscape Ecology	#1 No poverty Team name: HOPE.
3	Nadiya Mir L	CMU	Science	U2		
3	Chanyawee Saenmahayak	CMU	ICDI	U2		
3	Papawarin Thong-in CL	CMU	Nursing	U4		
3	Papapin Thong-in	CMU	Nursing	U4		
3	Rong Yi Sie	NCYU	Education	U3		
3	ZhiYou Lin	NCYU	Life Sciences	M1		
3	Wang Chien-Yi	NCYU	Education	U4		
3	Pei Ru Huang	NCYU	Art & Humanities	U4		
3	Li Ting Wang	NCYU	Science & Engineering	D5		
3	Hinaho Horiuchi	KU	Agriculture	U3		
3	Nakayama Masato	KU	Education	M1		
3	Khatun MST Rokeya CL	KU	Agriculture	D1		
4	Natdanai Khamluang	CMU	Science	U3	Mr. Andrew Caldwell, Adjunct Instructor, English Language (MC) Dr. Worawit Tepsan (Math) Ms. Usanee Pongsawaleesri (Mei) International College of Digital Innovation Prof. Jason Yang / Graduate Institute of Educational Administration and Policy Development/ Fields: Higher Education, Comparative and International Education, Educational Policy and Administration	#4 Quality of education Team Name: TTJ
4	Priya Witthayaprapakorn	CMU	Science	U2		
4	Peerada Kampotha L	CMU	ICDI	U3		
4	Duangkamol Theschumpa	CMU	Nursing	U4		
4	Monrada Thongsamrit CL	CMU	Nursing	U3		
4	Miao Yu Chen	NCYU	Education	U4		
4	Ching Ching Ho	NCYU	Art & Humanities	U2		
4	Shen Yun-Chia	NCYU	Education	D2		
4	Mei Miao Lin	NCYU	Agriculture	M3		
4	Kittithad Preechavachakul	NCYU	Management	M1		
4	Ogawa Naoko	KU	Engineering	U1		
4	Horiguchi Suzuka	KU	Economics	U2		
4	Motomi Takada CL	KU	Economics	M2		
5	Panuwat Phonlaem	CMU	Science	U3		
5	Tremaine Joshua Sanchez CL	CMU	Science	U1		
5	Kevin Dansuntonwong	CMU	ICDI	U2		
5	Athicha Duangkaew L	CMU	Nursing	U3		
5	Kanyapha Plookpunya	CMU	Nursing	U3		
5	Yung Hsin Chang	NCYU	Education	U4		
5	Lila Chang	NCYU	Life Sciences	U4		
5	Ewen Wang	NCYU	Art & Humanities	U4		
5	Zhe Yu Chih	NCYU	Agriculture	D3		
5	Naphatta-orn Phromratsarana	NCYU	Teachers College	M1		
5	Manatsu Fukuda	KU	Agriculture	U4		
5	Hironobu Murakami	KU	Economics	U2		
5	Nao matsuzaki	KU	Agriculture	U4		
5	Hayato Tanaka CL	KU	Economics	U4		

Note: Team Leaders denoted by L, Co-leaders by CL

Student presentation slides

SDGs Goal 3
<Suicide Issue>

Team 1
Quack Quack team

Supervisors:
Prof. Dr. Lrong Lim
Assoc. Prof. Mika Shiol
Asst. Prof. Dr. Benjamas Suksatt
Ms. Sabrina Concas

Assignment 13 members

* = Group leader

	KU (3)	CMU (5)	NCYU (5)
1 Content (6) - gather information	*Yumi (co-leader) Linxuan	Nam Ning	Kelly Chien Peng
2 PPT (2)		Neen (co-leader)	Shelly (Leader)
3 Speakers (5)	Kentaro	*Kaan (co-leader) Guy	John Han Ting

SDGs Goal 3

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

SDGs Goal 3 Ensure healthy lives and promote well-being for all at all ages

Including:

- 01 Life Protection
- 02 Disease Prevention
- 03 Health-care Services
- 04 Mental Health: Suicide Issue

What do you think about Suicide?

Why we want to talk about "Suicide Issue"

- It's getting serious recently
- Covid-19, people suffer a lot, causing more people to commit suicide

Number of people committing suicide in the world

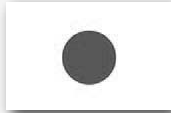
Figure 1. Age-standardized suicide rates (per 100 000 population), both sexes, 2019

One person killed oneself every 40 seconds.
It is the 2nd cause of death among youth.

What's the situation of suicide in our countries?

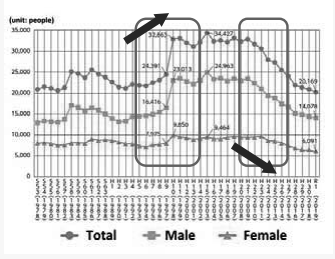
Japan, Taiwan, Thailand

Japan



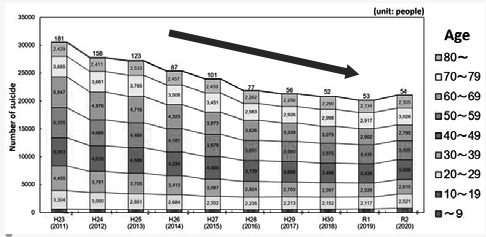
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How many people commit suicide each year?



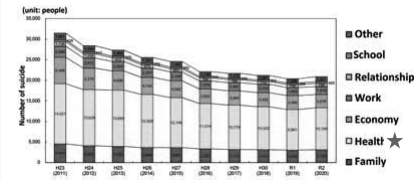
8

Suicide cases by age



9

Reasons why people commit suicide



- Multiple Factors
- Economy and Work
- Health

10

How the mass media report about suicide



Increasing The Suicidal Behavior of people.
Does not promote The Correct Concept of suicide.
As a result, media creates uneasiness among the audiences.

11

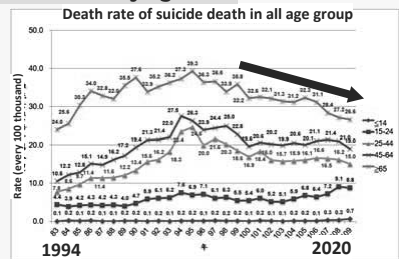
Taiwan



12

Suicide cases by age

Death rate of suicide death in all age group



13

Reasons for committing suicide

No.1 Emotion / Interpersonal relationship	No.5 School and student problem
No.2 Mental health / Drug abuse	No.6 Persecution
No.3 Economy / Work	No.7 Non to know
No.4 Physiological disease	No.8 Others

(2008 - 2020)

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Background of the reasons

1.	Social factor
2.	Psychological factor
3.	Biological factor

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Social factor

- The relationship between card debt crisis and suicide

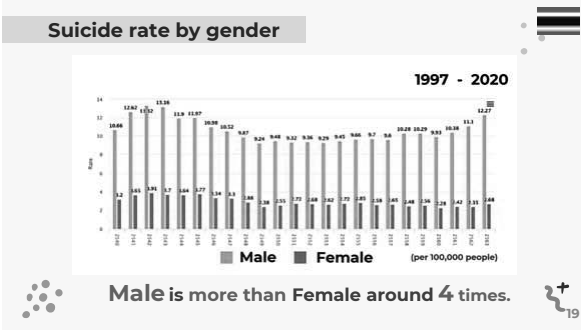
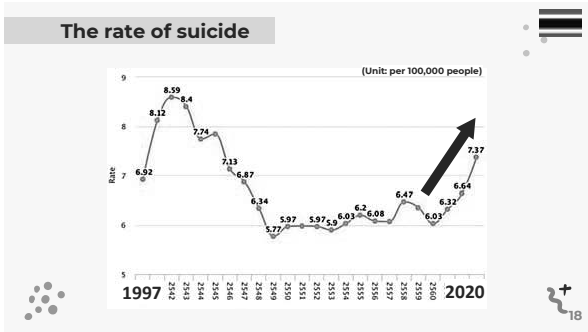
- 500,000 people can't pay for the debts.
- Financial problems can no longer be ignored.
- The diversified advertising & marketing methods, the greater the chance of personal economic crisis!

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Thailand



17



Reasons to commit suicide

- Family Reasons
- Personal Reasons
- Economy Reasons

20

Reasons to commit suicide

- Family**
 - Poverty
 - Heavy substance abuse
 - Seriously ill with psychiatric illness
 - Divorcing



21

Reason to commit suicide


- Personal Reason**
 - LGBTQs+
 - Cyberbullying
 - Depression, drug addiction, and physical illness



22




Reason to commit suicide


3	Economy	The pressure from social and economic conditions is high in big cities
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23

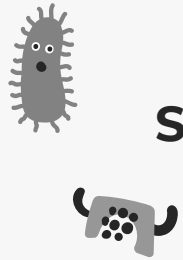
Reasons to commit suicide

 Japan	 Taiwan	 Thailand
1. Health	1. Emotion	1. Family
2. Economy	2. Mental health	2. Personal reason
3. Work	3. Economy	3. Economy



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Solution



25

The impact of suicides on society

- 1 Loss of population and quality of life
- 2 Multiple problems to the family and the community
- 3 Negative effects on the general public
- 4 Economic problem

26

How the media report about suicide

Four Don'ts

- 1 Don't put suicide news on the front page
- 2 Don't use sensational descriptions
- 3 Don't provide the location of the suicide
- 4 Don't use sensational headlines

27


How the media report about suicide

Four Dos

- 1 Provide correct help information
- 2 Report positive news
- 3 Be cautious in reporting celebrity suicides
- 4 Be cautious when visiting suicide survivors

28


What can we do as students



29

What can we do as students?

- 1 Ask someone you are worried about if they're thinking about suicide.



30

What can we do as students?

- 2** Keep them safe. Reduce access to lethal means for those at risk.



31

What can we do as students?

- 3** Be there with them.
Listen to what they need.



32

What can we do as students?

- 4** Help them connect with ongoing support.



33

What can we do as students?

- 5** Stay connected.
Follow up to see how they're doing.



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THANK YOU !



You have the power to say,
"This is not how my story will end."



35

Reference

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Sustainability & Clear City

TEAM:LCS
(Living comfortable and sustainable)

PRESENTER
Songfa Aidan Maxwell L (CMU)
Chemphe Thanakiatsekul CL (CMU)
Chou Ching Chieh (NCYU)

Date: 2021.09.22

LCS Living comfortable and sustainable

-CONTENTS-

11 SUSTAINABLE CITIES AND COMMUNITIES

Focus objectives

- Social Infrastructure
- Environmental Issues
- Prosperity decentralization
- Aging society
- Resiliency

- About our members...
- What is Goal 11? Why Goal 11?
- Issues 1 - Issue & Solution
- Issues 2 - Issue & Solution

LCS Living comfortable and sustainable

About our members...

CMU
Teerapat Kongrit
Chadarat Silatham
Songfa Aidan Maxwell L
(Co-Leader)
Chonnipa Thanakitsakul CL
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Patnaree Tapanya

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Edward Sogo Lutes
Hanae Urayama

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Mingchi Tu
Munlika Rattaphun
Chingchieh Chou
Yijing Wu

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What is Goal 11? Why Goal 11?

MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT AND SUSTAINABLE

THE PANDEMIC HAS WORSENEDED THE PLIGHT OF SLUM DWELLERS

THE AVERAGE GLOBAL SHARE OF URBAN AREA ALLOCATED TO STREETS AND OPEN PUBLIC SPACES

THE MAJORITY OF THE MORE THAN 1 BILLION SLUM DWELLERS RESIDE IN THREE REGIONS

USA COUNTRIES SHE DEVELOPED RESIDENTIAL WALKABILITY

BY 2050 THE WORLD'S URBAN POPULATION WILL CONVENIENTLY ACCESS TO PUBLIC TRANSPORT

THE AIM OF GOAL 11 IS TO MAKE CITIES AND COMMUNITIES RESILIENT AND SUSTAINABLE, BY MEANS OF PREVENTING NATURAL DISASTERS, PROVIDING GOOD LIVING CONDITIONS AND DISTRIBUTING CONVENIENCE EQUALLY.

AS WE ALL KNOW, SOCIETY TODAY IS FACING MANY CHALLENGES, THE BEST WAY TO PREVENT FROM UNDESIRABLE EFFECTS IS TO WORK TOGETHER AND BE SMART AS A SOCIETY, BEING INCLUSIVE AND AWARE OF FUTURE THREATS WILL MAKE THE SOCIETY SUSTAINABLE WHICH WILL HAVE A GOOD BENEFIT ON EVERY PERSON.

CREDIT - <https://sdgs.un.org/goals/goal11>

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Issue 1 Transportation

1
Inconvenient, unsafe and inaccessible public transportation system

2
Poor Public Transport connectivity due to urban hierarchy

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Solution

1
Connect potential city nodes by Smart Transportation

2
Increasing urban walkability motivates people to use Public Transportation

what is safe street design?

3
Inclusive, safe and universal design transits

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Issue 2 -Air pollution and renewable energy

1
Large number of vehicles

2
Thermal power and Heavy industry

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Solution

1
Strengthen the connection between transportation systems.

2
Strengthen the supply chain of the solar energy industry

3
Not just encourage electric vehicles

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- THANKS FOR YOUR LISTENING -

Design by Liang Chun Chen

LCS Living comfortable and sustainable

NO POVERTY

TEAM 3

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Group members

CMU

- Pichparnee Boonpradab
- Nadiya Mir
- Chanyawee Saenmahayak
- Papawarin Thong-in
- Papapin Thong-in

KU

- Hinaho Horiuchi
- Nakayama Masato
- Khatun MST Rokeya

NCYU

- Rong Yi Sie
- ZhiYou Lin
- Wang Chien-Yi
- Pei Ru Huang
- Li Ting Wang

CONTENTS

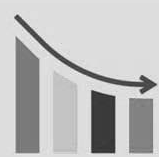
- Facts and Problem before COVID-19
- The Gap between Rich and Poor during COVID-19
- The Solutions

1

FACTS AND PROBLEM BEFORE COVID-19



in 2015
734 million people lived on less than \$1.90 a day

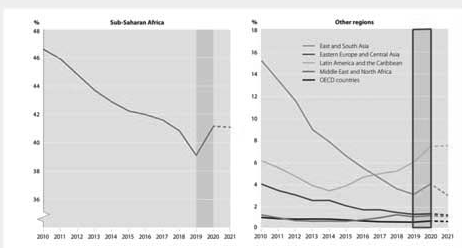


the world's workers living in extreme poverty fell by half over the last decade: from 14.3 per cent in 2010 to 7.1 per cent in 2019




Percentage of population living on less than \$2 per day

Southern Asia and sub-Saharan Africa are expected to see the largest increases in extreme poverty, with an additional 32 million and 26 million people



Percentage of people living in extreme poverty (less than \$1.9 a day)

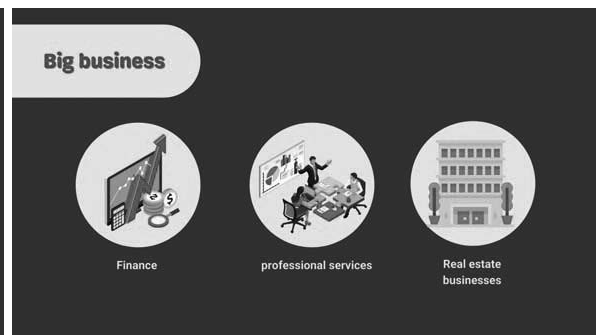
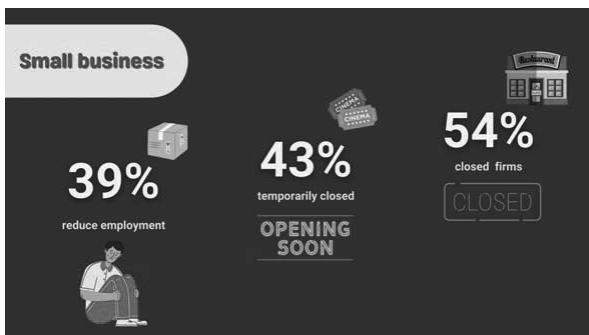
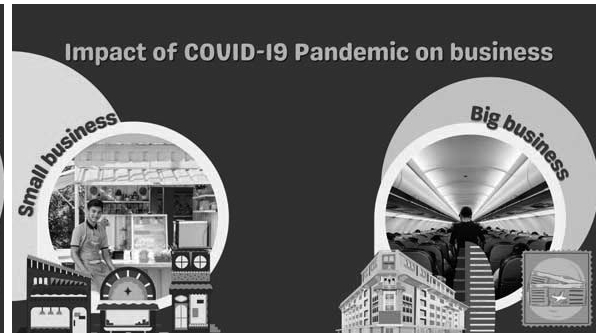


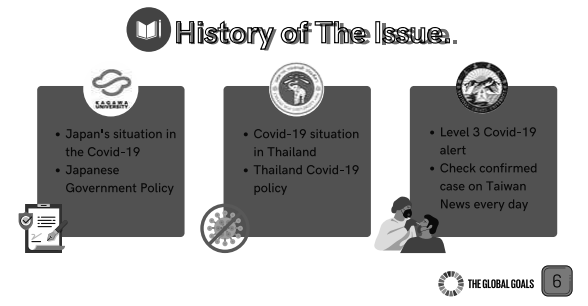
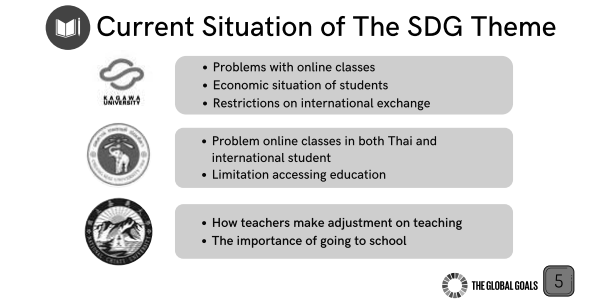
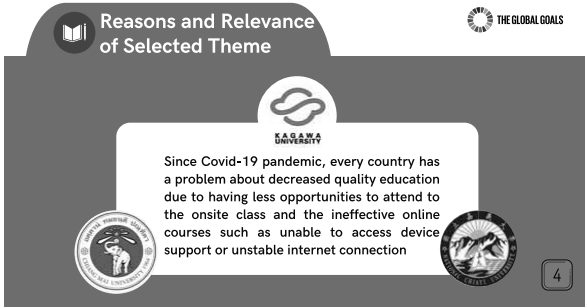
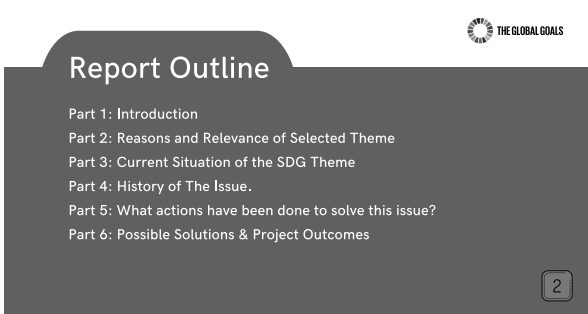
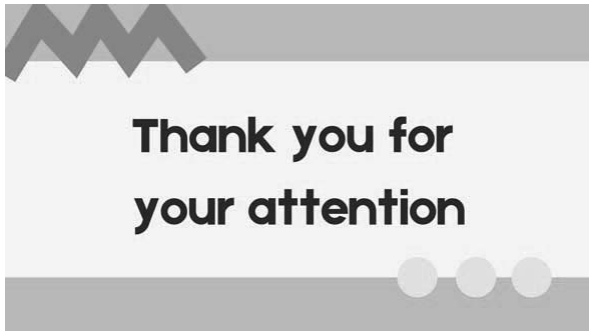
baseline projections suggested that 6% of the global population would still be living in extreme poverty in 2030

The fallout from the COVID-19 pandemic threatens to push over 70 million people into extreme poverty.






2

THE GAP BETWEEN RICH AND POOR DURING COVID-19





What actions have been done to solve this issue?








Scholarships and Student loans






Global Café Student Committee

Financial Support by MEXT

Information Dissemination



What actions have been done to solve this issue?








Mental Problem Support

Tuition Fee Reduction

Online Class Device Support

Student Loan



What actions have been done to solve this issue?









Online courses
ex: zoom/google meet

Require students put on mask and measure temperature

To vaccinate against the COVID-19




Possible Solutions & Project Outcomes

01 Scholarships and Student loans

02 Online Class Application


03 Online Class Device Support




Trilateral Symposium on SDGs (CMU-KU-NCYU)

TEAM 5
"5 FOR EQUALITY"

5th SDGs Theme : Gender equality



Members of Group

- 
1. Mr. Tremaine Joshua Sanchez (Leader)
 2. Miss Kanyapha Plookpunya (CMU)
 3. Mr. Panuwat Phonlaem (CMU)
 4. Mr. Kevin Dansuntonwong (CMU)
 5. Miss Athicha Duangkaew (CMU)
 6. Miss Naphatta-orn Phromratsarana (NCYU)
 7. Miss Yung Hsin Chang (NCYU)

Members of Group

- 
8. Miss Lila Chang (NCYU)
 9. Mr. Ewen Wang (NCYU)
 10. Miss Zhe Yu Chih (NCYU)
 11. Miss Manatsu Fukuda (KU)
 12. Mr. Hironobu Murakami (KU)
 13. Miss Nao matsuzaki (KU)
 14. Mr. Hayato Tanaka (KU)

1) Is it normal for men to like blue and women to like pink?

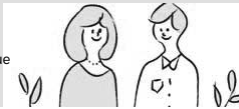
1.1 Toxic Color idea in products and fashion.
Pink for girls? blue for boy?, etc.

• THE NEWS OR PROBLEMS THAT WE SEARCH

1. Before World War II, pink-viewed as strength-was men's color and blue-representing gentleness-was for women.
2. After World War II, American apparel industry marketed blue for boys and pink for girls for their own benefits.

• SOLUTION

1. Be more aware of gendered marketing
2. Disrupt gender stereotypes
3. Use gender-neutral language on products with blue or pink packaging/designs
4. Stand for genderless fashion



1) Male: Wearing Makeup equals gay

1.2. Men can use cosmetics product such as foundation, chapsticks, lipstick, powder, eyeliner, etc.

• THE NEWS OR PROBLEMS THAT WE SEARCH

1. The number of men who are interested in makeup has increased.
2. More than 60% of Japanese women would be happy to share their cosmetics with men like their boyfriend and husband.
3. Genderless cosmetics are increasing.

• SOLUTION

1. Skincare/cosmetic basic knowledge needs to be made accessible/available to all- it can start in family talk.
2. See cosmetics as tools of beauty enhancement for all gender, not just women.



1) Male: Mainstream fashion is gender-biased.

1.3 Clothes have no gender

• THE NEWS OR PROBLEMS THAT WE SEARCH.

Thai student uniforms is just a mask of mandatory uniformity. While Taiwanese high school uniforms are more open and flexible i.e. they allows boys to wear skirts to a class.

• SOLUTION

1. To stop creating the wrong framework for young people, we must start correcting from a small point like home and community.
2. Create a modern concept that is not limited to clothes we wear.
3. Promote activities on freedom of personal dressing choice with activities based on available facilities.



1. Male: Product labels promote gender bias.

1.4 Fix Fault Gender Labelling

• The news or problems that we search

Some basic need products/toys are marketed as gender-exclusive such as 'Barbie Girl' or 'Men's lotion', results in fault gender stereotypes, discrimination, and discourage personal choices



• SOLUTION

1. Supporting gender-neutral products
2. Promote awareness when choosing products



2. Female: Abuse in women

2.1 Blaming from Outdated Knowledge, Tradition, and Family

• THE NEWS OR PROBLEMS THAT WE SEARCH.

Raped victim-blaming on dress choice, education, or family upbringing without exploring rapists' real reason of crime committing.

• SOLUTION

1. 'Don't Tell Me How To Dress' campaign
2. Change personal perception
3. Educate people on how to control their sexual drive and respect other genders.



2) Female: Abuse in women.

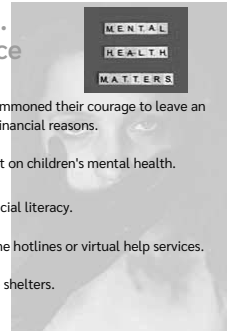
2.2. Ongoing female violence

• THE NEWS OR PROBLEMS THAT WE SEARCH.

1. Many female survivors of domestic violence who summoned their courage to leave an abusive relationship eventually returned to it due to financial reasons.
2. Women develop a mental health problem.
3. Domestic violence exposure has a significant impact on children's mental health.

• SOLUTION

1. Support and promote financial literacy.
2. Set up safe telephone hotlines or virtual help services.
3. Increase domestic violence shelters.



2. Female: Abuse in women

2.3 Body and Skin Shaming

• THE NEWS OR PROBLEMS THAT WE SEARCH.

1. Personal perception, different skin tone from their society = weird, being a clown in one's society suggesting through verbal abuse -harsh comments.
2. Expectation of following popular beauty standards, different = ugly or undesirable
3. Not wearing a bra and having a hairy body are unacceptable. "MUST WAX"



• SOLUTION

1. Think before commenting on others' appearance.
2. Use social media to spread/gain more awareness
3. Create/explore hashtags ex. #everyBodyisbeautiful



Body-Shaming.

2) Female: Abuse in women.

2.4 victim of sexual violence or sexual assault

• THE NEWS OR PROBLEMS THAT WE SEARCH.

1. Domestic violence against women is found the most and often unseen.
2. During COVID-19, domestic abuse has been rising worldwide.

• SOLUTION

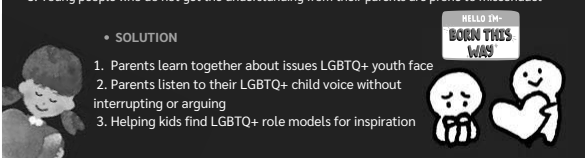
1. Victims: Encourage them to seek help.
2. Friends or people in the victim's cycle: Keep in touch and offer help.
3. Community: Establish community-based prevention program.



3) LGBTQ+: Outdated understanding of human's sexuality

3.1 Parents must not deny their children's choice of sexuality.

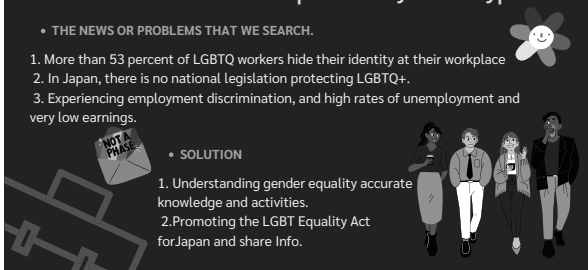
- THE NEWS OR PROBLEMS THAT WE SEARCH.
 1. More than 40% of Japanese parents find it "unpleasant" when and if they find that their children are homosexual.
 2. Young homosexuals or bisexuals are three times more likely to commit suicide at some point in their lives. But with the understanding of the family, this incident can be prevented.
 3. Young people who do not get the understanding from their parents are prone to misconduct
- SOLUTION
 1. Parents learn together about issues LGBTQ+ youth face
 2. Parents listen to their LGBTQ+ child voice without interrupting or arguing
 3. Helping kids find LGBTQ+ role models for inspiration



3) LGBTQ+: Existing limitations in basic human rights.

3.2 Career limitations and personality stereotypes.

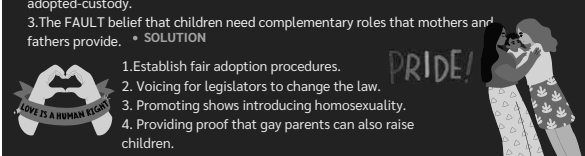
- THE NEWS OR PROBLEMS THAT WE SEARCH.
 1. More than 53 percent of LGBTQ workers hide their identity at their workplace
 2. In Japan, there is no national legislation protecting LGBTQ+.
 3. Experiencing employment discrimination, and high rates of unemployment and very low earnings.
- SOLUTION
 1. Understanding gender equality accurate knowledge and activities.
 2. Promoting the LGBT Equality Act for Japan and share Info.



3) LGBTQ+: Existing limitations in basic human rights.

3.3 LGBTQ+ can become legal parents/guardians.

- THE NEWS OR PROBLEMS THAT WE SEARCH.
 1. The reason for refusing to adopt a child by a lesbian couple is that there is no "father referent" in the family.
 2. In Taiwan, only one of the two gay parents can pose their children's biological or adopted-custody.
 3. The FAULT belief that children need complementary roles that mothers and fathers provide.
- SOLUTION
 1. Establish fair adoption procedures.
 2. Voicing for legislators to change the law.
 3. Promoting shows introducing homosexuality.
 4. Providing proof that gay parents can also raise children.



3) LGBTQ+: Existing limitations in basic human rights.

3.4 Unfair Law

- THE NEWS OR PROBLEMS THAT WE SEARCH.
 1. Taiwanese Marriage law is unfair in many aspects for LGBTQ+.
 2. Many people use childbearing ability to oppose LGBTQ+ from getting the same rights as the heterosexual couples.
 3. Taiwanese LGBTQ+ marriage law doesn't reflect the true equality of human rights.
- SOLUTION
 1. Discussing and being open to different views.
 2. Providing correct information before conducting a referendum
 3. Accepting and respect gender differences



THANKYOU

Any Question ?



Team leader reports

Team 1 “Quack Quack team”

Yumi Miyashita, Kagawa University

I was in team 1 “Quack Quack team”. In my team, Shelly was a great and the best leader. She planned for us to discuss, and she helped us in many aspects. We divided our group into 6 members for gathering the information, “Content”, 2 members for making the power point, “PPT”, and 5 members for “Speakers”. I was the leader for the “Content” group. First, we discussed the outline of our presentation using zoom, and shared the form so that all members can write their ideas while discussing. Our team had a meeting for 3 or 4 times to share our opinions. We were able to talk about our situation because of covid-19 as well as our main topic suicide. We talked about our future dreams using zoom and my teammates cheered me up. I am very happy to be able to make great friends. Then, we searched for the information about suicide for each country and compared in order to come up with the solution, what we students can do and what our countries should do to decrease the number of suicides. I was able to widen my view. I want to thank my wonderful team members.

Team 2 “LCS (Living comfortable and sustainable) ”

Li Xiaodong, Kagawa University

This is a very commemorative activity I have participated in in my study career. When I first saw the activity that the Kagawa University held the activity, I was also exposed to the information about SDGs for the first time. When I was studying in China, I didn't pay much attention to the relevant information. Thank you very much for this activity held by KU, which gives me the opportunity to exercise my ability and understand SDG sat the same time. Our team members actively participated in this activity. It's also very interesting to talk about me being the captain. We decided the leader through ‘Rock Paper Scissors’ game among the four co-leaders. After determining the team leader, we held a collective meeting to discuss the name of our team and the theme we want to focus. Among the 17 topics, we selected topic11 by voting. In order to make our team more united and cooperate, I assigned tasks to different universities. Chiang Mai University has two co-leaders who are responsible for the collection and sorting of relevant data in Thailand. A co-leader in Taiwan, responsible for sorting out everyone's ideas and suggestions and improving our slides. There is also a particularly active student from Taiwan to help the co-leader complete the task. Everyone is actively preparing for the SDGs activity. Through continuous data collection, meeting discussion and revision, our team finally formed our own speech slides. As a leader, I would like to speak on behalf of our team. However, our team members all are active, so I gave the opportunity to team members who wanted to show themselves more. We have learned a lot from team leader selection, theme selection, task assignment, progress reporting, final summary and publication. We have also met many good friends and learned about the current progress of SDGs in different countries and regions. We are very happy and hope to have the opportunity to cooperate in the future.

Team 3 “HOPE.”

Pei-Ru Huang (Yugi) , National Chiayi University

In the first online meeting, everyone introduced themselves to each other and told their favorite topics in SDG. We had different ideas and preferences of SDG goals. Since team members would like to do different topics, the host invited everyone to talk about the topic they choose. Then, we discussed some SDG goals and highlighted the importance of these goals. All goals in SDG were very important, but we needed to choose one for our presentation. In the end, we decided to found a Line group and vote for the topics.

The result of the vote is “No Poverty”. The first goals in SDG. Most of people thought if the poverty can be eliminated, some problems can be fixed. It affects other SDG goals a lot, for example, “Affordable and Clean Energy” “Clean Water and Sanitation” and so on. People could not have clear water and enough energy because of poverty. Moreover, they did not have chance to learn to read and write, so they could not find a better job and got rid of original environment. It usually turned out to be a vicious cycle. For making everyone to understand this topic, we decided to focus on 3 aspects.

The first is what is SDG1? We needed to introduce the situation and the purpose of no poverty. The second is the situation of poverty. Many people knew poverty is a serious problem, but they did not know the number of poor people and degree of the situation of poverty. The third one is solution. After understanding this issue, what we can do and people around the world how to improve poor people’s life.

I distributed jobs for everyone according to their willingness and talent. If someone good at speaking, I would recommend him or her to be the speaker. I also made the schedule to make sure everyone finishes their job on time. When team members had question, they would discuss in Line group. Two days before the presentation, we hold a rehearsal for every presenter. Everyone did well not only in rehearsal but also the presentation. We had good cooperation during the symposium and we had great time. Everyone in our group work was active and worked hard for our presentation. I thought we gained a lot from this experience.

Team 4 “TTJ”

What was most interesting during meeting with team4 is not to get knowledge of the SDGs, but to get to know that students from other countries also didn’t know much about the SDGs as majority of Japanese students. Before attending this session, several teachers and international students told me that Japanese young people have less interest in politics than students in other countries. Unfortunately, lots of Japanese students couldn’t have any confidence in front of people from other countries, because of this rumor. I heard this groundless information from so many people, but this session made me realize students from other countries are also not that interested in politics including the SDGs, like Japanese students. Hopefully this session could take a role to bring other Japanese students closer to students from other universities.

In addition, one this that I realized from team4 is one of the important tools for students who have different background to interact with each other, but in terms of building continuous

friendships after those sessions. In other words, English may, contrary to its purpose, estrange students from each other. Regardless of what countries students are from like from Chiang Mai University or Jia Yi University, they spoke a lot if they were confident in English, and they didn't provide any comment if they were not confident in English. I found this situation exactly the same as Kagawa University. However, especially the students of Jia Yi University spoke their emotions more honestly when I talk in Chinese through LINE individually, and also other students told me they wanted to make better friendship but was not able to do that in English. Some students from Jia Yi university told me they wanted to get along with Japanese students. Therefore, although the use of English could give a lot of opportunities to students, another support system might be needed to make subsequent relationships between students.

It was a very meaningful session for me because I would like to be involved in the internationalization of universities in the future. I am very grateful to the teachers and staffs for giving me such great opportunity.

Team 5 “for Equality”

Tremaine Joshua Sanchez CL, Chiang Mai University

Team 5 for Equality is a team that works as a group. The chemistry between the students from my team is high the way we accept and listen to other opinions respectively is what makes this team great.

Our team started with not knowing who to be team leader but then after a quick discussion between all of us we then decided who to be the leader. It was a great opportunity for me to express my opinions and speak publicly all the team members had a major part in this Symposium even though I am the youngest in the group they still accepted and respected my opinions and decisions this is what made our group fun to work with. Other than that, the different nationalities between each student were wild but nonetheless we were able to cope with each other easily. Having strangers come into a meeting and express opinions is difficult but the team members made it easy for anyone who is speaking.

One great aspect of my team is just being themselves being who you are no matter where you are from this aspect made our team fun to be with. I can speak for everyone else when saying that each team member had fun with the student discussions.

Finally, I would like to say thank you for giving us this opportunity to express our opinions no matter where we come from and accepting us for who we are.

Student reports of Chiang Mai University

1 Athicha Duangkaew

Report: Experience through ward the "Trilateral Symposium on SDGs."

My name is Athicha Duangkaew, a student from Chiang Mai University and group 5 for equality. First of all, I would like to thank all of the presidents, supervisors, and coordinators from three universities for conducting an incredible event and providing me with an opportunity to participate. I am the one who is afraid of having new relationships with others, and I rarely have a chance to have a conversation with foreigners. Once I saw the poster promoting this activity, I still stayed in my comfort zone since some teacher told me that if you are afraid of one thing and you are not brave enough to fight or step out of your comfort zone, then you will not learn anything new you will not receive any connections that may bring more and more opportunities to your life. The perspective of my life had been changed after I decided to participate in the trilateral symposium on SDGs.

Form the first session, everyone was afraid to speak out initially, but the leader is the first one who speaks out, which makes others feel comfortable with say. The team leader tries to support everyone's point of view. Although it was the first time we had met others, we shared many ideas and discussions and paid full attention and respect to each other. Started with an open-minded conversation made me desire more and more time to have a further discussion.

In the second session, since our chosen topic is a bit sensitive, we have intensely discussed the experiences that each team member has faced or any culture that the member thought was discrimination or some false belief about gender. Something we get used to in our daily lives causes the habituate and do not concern what is going on around us. Learning about new cultures, how they are thought and listen to the opinion of the native is the most beneficial thing to hear.

In the final session, we have been prepared presenters and what contents they have to talk about. When the presenting time comes, we have a problem with the connection then our chat is like a disaster on what is going on. Finally, everyone has done a perfect job. Although we are not at the same place, we try to keep in touch and update the working process. After the session, we had a few conversations to thank all team members for having an excellent team and wish we could see each other shortly.

Since our chosen topic is about inequality in gender, as a nursing student who needs to provide nursing care professionally to the opposite sex client, after the session, I have learned that some unintentional actions may discriminate against another sex. As a woman, sometimes my action or facial expression when providing care might make the male client feel uncomfortable and dissatisfied, which I have not noticed. Therefore, exchanging and knowing other sides leading to have more understanding of the clients. The learned lesson that I got from working with people from three different countries is how to manage the time because Thailand, Japan, and Taiwan are one hour apart, so we need to consider and plan for a suitable and convenient time to work together. I saw that even some friend is on her business, but she tries to join the discussion session and everyone have been prepared the issue and supported information from our own country

so when we have a meeting, our works can flow well. Obstacles always come to challenge us, so we must think and solve them. Whenever we have any problem team, always think, solve, and cheer up all members to have the best work. Lastly, I would like to thank all of the supervisors, coordinator, and team members to help building an amazing experience and relationships with the women who used to scare of having the challenging task in her life. In contrast, I realize that I love joining and exchanging new experiences with other international students, and if the trilateral symposium is conducting next year, I would like to be part of the event again for sure. Thank you for having me be a part of the trilateral symposium on SDGs.

2 Chadarat Silatham

It is my pleasure to join this salutary project. All of the things I learned from the session are very useful. First of all, exchange opinions with the team members about the problems in SDG11 in different countries. Second, my English skills have improved a lot through the session and a little bit of Chinese and Japanese.

From Student lesson, based on my studies, such as how to solve and enhance the environment in each country, I know how to manage the environmental issue in each country to develop my countries in the future (air pollution, waste water, transportation)

3 Chakkapop Lapimol

From the gainful event I have joined to cooperate with students from different universities, it benefits me about working with defence kind of people via online. I thought it might be difficult but it turned out completely different. We struggled a little bit about communicating with each other, eventually I am very satisfied with our work.

In the student session we have chosen a topic that our team interested in which is Suicide and I learned from different opinion from different prospective like what they think about the problem or various way to try to get this problem solve.

Last one is learning from the other groups about problems that also occur in society. Along with the using SDGs goal to be a tool to help with the related problems.

The student session provided me with a huge motivation in cooperating with the national teammates, it might make my career go abroad and wide opportunities. And for the topic our team chose it not directly to what I learn in my major, but their factors from the environmental pollution might interrupt the mental health of people and problem occurred.

4 Chanida Kaewpluk

Hello, I'm **Chanida Kaewpluk** from team1

Three lessons I learned from participating in the Student session, firstly I had a great experience during the student session. My team member and I have good cooperation. We always share the opinion and have a discussion. We divided the work among all the members and everyone this it well even though there is a slight difference in availability time for each of us. And my leader is excellent. She always keeps up with the work and always asks for opinions from

team members. She is a good leader.

And I think this is an excellent opportunity for me to improve my English skill. I dare to use English to talk more with friends. Therefore, I have to find an English translation that helps me learn more vocabulary for any word that I don't know. Besides that, I also learned about listening skills because I have friends from different countries like Taiwan and Japan who have different accents, so this is the best opportunity to practice listening to different accents in English.

And the last thing is new knowledge. I never knew and never heard of what SDGs are, but now I know. And besides learning the SDGs information of Thailand, I also learned about the SDGs of Taiwan and Japan. I think this is a good opportunity for us to exchange knowledge and information between countries.

And if you ask me **what the relationship between the lesson from Student Session and my study is**, I think the first is research skills, and the second is that I am a nursing student. Participating in this activity made me learn about the well-being and health system of people in the country. It will be helpful for me to provide comprehensive nursing services to patients.

Thank you

5 Chanyapa Wanchaithanawong

My name is Chanyapa Wanchaithanawong, I'm a current student at Chiang Mai University. As a result of participating in the Trilateral Symposium on Sustainable Development Goals 2021 with NCYU and KU, there are 3 main learning outcomes; Every opinion matters, Practice makes perfect; SDGs are important.

The first learning outcome; Every opinion matters: as we are students from different fields, universities, and nationalities, so it is normal to have opinion differences. When people are thinking in the same way, but you think in a different way it doesn't mean that your perspective is wrong. It might be a better idea than what others think off. In the student section, where we shared our opinion or idea, there was one of my group members make me realized that 'Every opinion matters'.

The second learning outcome; Practice makes perfect: on the last day of the symposium, every group needs to do the presentation. Before the presentation date, all of my group members were work hard to prepare the presentation as well as we could. We also practiced presenting our presentation, first time some mistake occurred, thus when we keep practicing it getting better and better.

The last learning outcome; SDGs is important: before participating in this symposium I have ever heard the word SDGs but I didn't know deeply about it. After the discussion in the student section, I realized that each country; Thailand, Taiwan, Japan faced different problems or same problem but different details. And I get to know more about SDGs; the action in one area could affect outcomes in others.

As a student of the International College of Digital Innovation Chiang Mai University, my study field is to be a start-up, entrepreneur, or data science. To study in this college, communication, presentation, and management skill are play an important role. Communicate with

foreigners is not easy because we have different accents and different language skills. I appreciate the chance to join this activity in order to improve my skills, a bunch of skills is boosted. And most importantly, I get to know and work with students from NCYU and KU.

6 Chonnipa Thanakiatsakul

Experiences with the Student Sessions

My name is Chonnipa Thanakiatsakul, studying at the Faculty of Dentistry, Chiang Mai University. I am a member of team 2 which focuses on SDG 11 (Sustainable Cities and Communities). My experience from participating in every session was priceless. I have met so many new friends from diverse cultures, it took me not so long to get along with them due to the openness of each other's minds.

The first thing that I have learned from the symposium was realizing the problems that I had always ignored. Nowadays, the world we live in has so many problems to face that we must try our best to remedy them. Exchanging our problems and thinking of the ways to solve them.

Secondly, I have learned how to work as a team and cooperate with many people from various cultures. It teaches me social skills, creativity, and patience. From my perspective, working as a team can create alter paths of doing things, asking questions, and offering help when necessary.

Thirdly, all the presentations that had been created made me acknowledge the world much better than I was, for instance, LGBTQ+, natural disasters, poverty, pollution, the suicidal issue, the COVID-19 impacts, and so on. I come up with understanding these problems deeply and have empathy towards others. Empathy, humanity, and support for each other are more important than revenue than growth.

Furthermore, as I study in the medical field, I can relate those lessons learned to my studies, to give you an idea, with the suicidal issue, as it continues to be a serious problem among many people, I will do more research about that, and find the most efficient way to decrease the suicide rates. I will use my voice to encourage people not to be ignorant and be aware of the difficulties that the world must face. With our efforts, I can surely confirm that no matter how tough today's situation is, we will get through it together.

Last but not least, I would like to say thank you with all my heart for creating this marvelous symposium. As I have mentioned, it has changed me a lot. It encourages me to do all my best to make the world a better place, and I will.

7 Duangkamol Theschumpa

Explain three lessons (things) you learned from participating in the Student Session.

Write one paragraph (4 or 5 lines) for each lesson learned.

Answer: Three lessons I have learned are teamwork, communication, and management. In details, firstly teamwork is a little bit difficult to build-up since we were from different places, and it was all online meeting which mean it take times to have it but finally we did. Next, communication is disturbed sometimes when we were chatting via our Line because of each country's time zone so we decided to have a conference by ourselves every week to see the progress. Lastly,

management, according to the time zone, it affects the management of our group such as the deadline of each work and the time that most of members are available were less by the way we tried it out until we finished this program.

(a) **What is the relationship (significance or benefit) between the lessons learned from the Student Session and your studies or future career? Describe in one paragraph (4 or 5 lines).**

Answer: First, I am the 4th year nursing student who nearly to graduate and what is can be significance or benefit I would say management and communication. From the experience through this program compared to my studies and future career, the management and communication are the significance thing that should have because we have managed everything in the progress to finish the discussion until presentation as same as nursing we have to manage since client first admit until they discharge. If doing thing without management, the result is mess up absolutely. For the communication, since it is a team of course we cannot do things by ourselves, we need to talk as a discussion to run the process until it finished for this program and, like the nursing without talking to other nurse staffs is impossible since in the hospital there are lots of client came and only one person cannot handle it so the communication between coworker is important to continue the process of treatment of clients effectively.

8 Jidarat Lakleam

Report: Experiences with the Student Session in Trilateral Symposium on SDGs 2021: Academic Symposium CMU-KU-NCYU

Before start the article, let me introduce myself first. My name is Jidarat Lakleam from Faculty of Education, Chiang Mai University.

First time I joined this symposium, the reason I am a first-year student makes me feel exhilarated. Everything was new to me. I met supervisors and students from Kagawa University in Japan and National Chiayi University in Taiwan. They are kind and friendly to me.

The first session made me feel nervous. We had introduced ourselves to each other before talking about the SDGs Goal we were going to present on 22th September. I became a sub-leader in the group which made me feel delighted. Then, we decided to choose the SDG Goal 3: Good Health and

Well-Being. From this session let me know more friends from international universities and notice how each country has aspects about Sustainable Development Goals.

The second session was discussing what we would put in the presentation. Our group chose the suicide issue occurred in three countries. We thought that one of the causes that makes people suicide themselves is COVID-19. Moreover, this problem impacts many parts of countries; economic, health, and society. We had arranged into three sub-group, the content group, the PowerPoint group, and the speaker group. I was chosen as the PowerPoint group along with Shelly (Leader of the group.) From this session, I have learned how to communicate to people by using English. This makes me improve my English skills, especially speaking and writing skills. Moreover, it helps me improve my technological skill, for example, how to use Slidesgo.com, or how to use Google Slides for making presentations. About teamwork, I have learned how

to cooperate with other people, also how to communicate with others by using social media and online applications such as Zoom, Google Meet, and Line. In addition, I have learned about the SDGs happening in Taiwan, Japan, and Thailand in SDGs Goal 3; the causes of suicidal problems, how the governments in each country solve it, and how we, as a youth, can deal with this issue.

The third session; Presentation let me know what SDGs in aspects of other groups seeing in this COVID-19 pandemic, also the aspects in each country seeing SDGs. For example, in my group, Japan, Taiwan, and Thailand have different solutions to suicidal problems. This enlightens me more about Sustainable Development Goals in other countries. Moreover, the suggestions from supervisors let me know what I should fix in the presentation. Last is about friendship, I have more SDGs Advocates and connections from this symposium.

This symposium teaches me many things, team working, SDGs knowledge, and presenting.

Also let me have more connections with SDGs youth in Taiwan and Japan. I wish that if this symposium had the second in next year, I would participate in it. Thank you to supervisors, Quack Quack Team, IRDCMU, LICMU, and the related people for this opportunity. I promise I will use everything I have learned from this symposium to improve myself, my community, and my society to be a sustainable city one day.

9 Monrada Thongsamrit

Experience with the Student Session

My name's Monrada Thongsamrit, from team JTT SDG 4: Quality of Education. It's my first time participating in the trilateral symposium, which gives me a lot of experience that we can't find in the faculty. In session 1, we started to know each other by introducing ourselves and voted for the leader and co-leader. After knowing each other, we discussed the SDG theme that we used for presentation and had the host be the guideline for us. Even though we can't select the theme, we agree to create a line group to continue discussing the theme. In this session, we also contact each other directly to greet, get more to know each other and let foreign friends visit our country if the COVID-19 situation improves.

In session 2, Discussion and preparation for the presentation. It was the most challenging session because we had a meeting every weekend to discuss the theme and topic for the presentation. Sometimes, we had a conflict about the issue and the topic. However, we talked together to let our point went to the same way. During this session, we had a problem with the time difference because we needed to select the time that all members were available to set the meeting. So, we have only one hour to talk with all of them. From this problem, as the co-leader, we need to consult with the leader almost every day to manage the team, coordinate, and lead the member if the leader is unavailable to get work in time and divide the member's role for working their responsibility. In this session, even we had many problems with the time gap in each country, the conflict about the issue, and the participation within the team. It gives me to improve my leader skill and learn how to manage the team effectively and reach the goal that we want, also improve my English skill because we have to discuss with foreign friends.

In session 3, it's the last session for listening to the other team. All of the groups had an

interesting issue; topic 5, Gender equality, is the one issue that is interesting because, in the past, they didn't accept the LGBTQ+ gender and were blamed as the people who have the mental problem. They need to improve their skill or talent to let the people in the society accept them. In fact, they didn't have to do anything to accept in the community because they're the same as us. Nowadays, they are getting more accepted in the gender difference; they have more rights to choose the gender they want. It's not depended on the biological sex, the color for each gender, and the clothes; the skirt for women and pants for men.

10 Panuwat Phonlaem

Experiences with the Student Sessions

Personal Information

My name is Panuwat Phonlaem I'm a third-year undergraduate student in Environmental science from Chiang Mai University students ID:620515013

Team and sections

My team is the fifth team and the team's name is 5 Gender Equality and we should Sustainable Development Goals article No 3 gender and equality.

Work experience

Sessions 1: We gathered a group to introduce ourselves and say something to the group the next step we find a group leader his name is Josh from Chiang Mai University and we discuss sustainable development goals and should one topic to the presentation we should article No 3 gender and equality and create a group line.

Session 2: We discussed the topic of gender and equality we separate into 3 main topics is male, female, and LGBTQ+ and find problems that arise in each country and how to solve the problem with another sub-topic as follows

1 Male

1.1 Color to use product, fashion. Why is pink for girls or blue for boy or etc. 1.2. Men can use cosmetics product such as foundation, lipstick, powder etc. 1.3. Men can wear skirt or something not only trousers, dress codes. 1.4. Labelling of product such as How different of product quality for men and women, the label more specific of using for each gender or gender exclusive labels.

2 Female

2.1 the blaming comes from knowledge, tradition, family 2.2 What is topic about abuse or violence that women experience (by physically, mentally, cyber culling) Not focus on sexual abuse because we will talk this topic in 2.3 What is topic about body shaming, skin shaming, racist 2.4 victim of sexual violence, rape victim or sexual assault.

3 LGBTQ+

3.1 LGBT youth and family acceptable 3.2 Career (politician, singer, artist, lawyer, doctor etc.) limitations and personality stereotypes. Gender doesn't limit talent. 3.3 LGBTQ can be parent for their children, LGBT adoption. 3.4 Same-sex marriage. Why It should be legalized or give the fact of the topic, etc.

Session 3: We prepare a presentation by division of duties with someone doing PowerPoint

someone doing share screen and someone presentation and we find more information and time to presentation

We have gained knowledge from other groups presenting their work on SDGs various topics.

experience

This activity allowed me to make new friends from both Japan and China to learn about the time zones and some cultures of the country. On the working side, I can apply the knowledge gained from the activities to my future work. Since I am an environmental science student, I need to have knowledge of SDGs in order to develop a sustainable environment.

11 Papapin Thong-in

(a) Explain three lessons (things) you learned from participating in the Student Session. Write one paragraph (4 or 5 lines) for each lesson learned.

(b) What is the relationship (significance or benefit) between the lessons learned from the Student Session and your studies or future career? Describe in one paragraph (4 or 5 lines).

Hello, My name is Papapin Thong-in fourth year nursing student from Chiang Mai University. I'm in team 3 which selects and presents the topic of No poverty.

Before I joined this symposium, I never knew the term SDG. After I researched and studied the information to be used in the presentation. I feel that the SDG project is very interesting and useful. I want everyone to know more about SDG because when people start to pay more attention The driving force of the project will be greater. And Thailand will be able to be a better country than before.

As a group working, it's quite difficult. Due to the limited time of the meeting, the members were strangers to each other, and the topic was new for everyone. However, we were able to resolve the hurdles and work out perfectly. I want to thank all the team members for helping each other. And I want to thank the creator of this project. Because this seminar added more to my experience.

12 Papawarin Thong-in

1. Explain three lessons (things) you learned from participating in the Student Session. Write one paragraph (4 or 5 lines) for each lesson learned.

By participating in the event, I have learned more about SDGs. I used to know SDGs superficially, but when I came to this activity, I had to learn more about SDGs. So, I realized that SDGs are very important in daily life. Everything we are doing is related to SDGs, so it's very important that we help each other to know more about SDGs and help to achieve the goals.

What I learned next was formal and semi-formal communication. For me, using English tends to spend most of my time talking with friends, getting used to informal communication. However, when participating in this activity, it was necessary to use a different way of speaking as we had to talk to teachers and friends who had just met. Therefore, communication is one of the things that I need to learn how to adapt to the situation.

The last thing I have learned was working as a team. There were some obstacles in this work, whether it was because we had little time to talk, didn't understand each other, or didn't dare to

express our opinions. But this work went well because everyone in the team cooperated to do the duty that they were assigned the best.

2. What is the relationship (significance or benefit) between the lessons learned from the Student Session and your studies or future career?

In my view, this Student session relationship has benefited me a lot. It taught me how to build good relationships and taught me about leadership. Both of which are very necessary for future work. I am very impressed to have good friends from this activity.

13 Patnaree Tapanya

My name is Patnaree Tapanya, a CMU student from group 2. I would like to write a report on my experiences with the student sessions. From the first day that we met, all of the team members have cooperated well. We shared our opinion, started by discussing a goal of SDGs that we have chosen. At first, we had many ideas from many people from different universities. Then, we decided on goal 11 because we all agreed that all 3 universities have this similar problem. For example, the issue of transportation can also lead to air pollution and road accidents. Next, we discussed the problem of air pollution. For Chiang Mai, Thailand, air pollution is hazardous and persistently occurs in March-April of each year lately. NCYU students are also concerned about this issue in their country because of the increasing population and vehicles. However, students from KU mentioned that for Nippon, air pollution is not the main issue, so I'm very impressed with their management system. Actually, we also discussed the impacts of COVID-19 and the issues about an aging society that impacts their quality of life and social functions. Unfortunately, we have to cut these topics off due to the limited time. However, they are also interesting topics, and I will do some research later on. Our instructors in the group are very kind and helpful in instructing our team in good shape and complete our presentation.

The lessons that I have learned from joining this activity are varied. First, I learned that air pollution and transportation are also a problem in other countries in Asia, as many cities grow. Nowadays, we live with many risks, especially with the PM 2.5 that causes many health complications. Then, our members from KU said about waste management systems in their country, which helps a lot in terms of alleviating air pollution. In Thailand, the Thai government also set the policy called zero burning policy with strict law and set campaigns that create more awareness of consequences related to air pollution. So, I think it would be good to develop goal 11 (make cities and human settlements inclusive, safe, resilient and sustainable) with combinative ideas from different points of view, cultures, and countries.

Second, I learned many aspects from other SGD goals from other groups. Group 1: goal 3, they talked about a suicidal issue in all 3 countries that joined in this activity, and economic effects a lot for people's mental health. I also noticed that from the statistics that they provided, men have more rate of suicide more than women in all countries. Group 3: goal 1, they emphasized on the impacts of COVID-19 on the economy. It causes more gap between rich and poor during the pandemic, and there are only some groups of profitable businesses such as E-commerce and hand sanitizer market. Group 4: goal 4, they are concerned about quality of education, especially during

COVID-19 with online learning. Both students and teachers are facing the problem with online classes, unstable internet connection, economic situation of the students for reaching electronic devices, and adjustment. Group 5: goal 5, they presented the issue of gender inequality in every country. It is a problem that is sensitive to cultural norms and people's beliefs. However, in globalization world, everyone has rights to live their life as who they are.

Third, I learned about teamwork with friends from different cultures and different point of view. There are some points that I have not heard about it before, and I was surprised. For example, in Taiwan, many scooters cause air pollution. I also learned some Taiwanese and Japanese languages from our friends during the discussions. The most important is that I got opportunities for new work experiences, new knowledge, and lovely new friendships.

Consequently, I think all of the lessons learned from this activity can be adapted to my future career. For nurses, human quality of life in a holistic approach (mind, body, and soul) is our goal. Every problem related to human well-being is our primary concern. All issues that every group mentioned are related in some way and somehow. COVID-19 pandemic affects a lot to economic management and quality of education in every country in the world, causing more stress and less hope for people, leading to mental illness ranging from mild anxiety to severe suicidal ideation, and some achieve their attempt to end their life. Moreover, LGBTs are vulnerable to mental health problems as well, as they are still treated unequally. Besides, as urbanization grows and more people in the city using individual transportation, especially COVID-19 pandemic that public transportation is taking the risk of infection, air pollution is getting worse. PM 2.5 can get into the lung easily, affects everyone from young to old. Especially the people who already have underlying diseases such as asthma, COPD, allergic reactions, and low immunity are suffering a lot during the critical period of air pollution. During the pandemic of COVID-19, it makes things more complicated with the similarity of dust allergy and COVID-19 signs and symptoms.

Nursing care aims to promoting health, preventing illness, restoring health, and coping encouragement. To achieve these aims, nurses require both science and art. The science of nursing utilizes scientific knowledge and academic skills to meet the patients' needs. From this activity, I got the opportunity to practice more with researching for evidence-based practice giving resourceful information in our topic of goal 11. Then, I learned to analyze information and solve problems with critical thinking skills. The art of nursing takes time and experience to become aesthetically skillful. It includes communication, caring, healing, compassion, non-judgmental, cultural sensitivity, and ethics which I have learned from the team working with kindly friends from other 2 universities.

Finally, I would like to thank you for conducting this fantastic activity for us. I have really enjoyed this Trilateral Symposium on SDGs 2021.

Patnaree Tapanya, 3rd-year nursing student, Chiang Mai University

14 Peerada Kampotha. **“Experiences with the Student Sessions”**

My name is Peerada Kampotha. I am a third-year student at international college of Digital

Innovation, Chiang Mai University. I was very excited to participate this seminar even though it had to be online. I also prepared some information and went into each topic of sustainable development goals (SDGs) before the symposium thinking that the activity would be some serious.

In the first session, every university; KU, NYCU, CMU showed the video how each university has done in the subtopics of SDGs such as CMU with CMU smart students' policy for SDGs number 4. Every speaker was great, and their English was also easy to understand as well. Then, they separate us into small team which I was set to be in team 4 with mix students from CMU, KU, and NCYU. Some of us are undergraduate students while from the other countries I met master's degree students who even working as teachers right now. One of my Thai teammates is in Taiwan because he applied to study at NCYU. Our team had 3 staffs helping us which are Mr. Caldwell from KU, Dr. Worawit and Ms. Usanee from CMU. In the first session, we needed to decide which SDGs topic that our group will be working on. Our team members had proposed and share their point of view on each topic, but we didn't decide on time.

Before session two begin, our team organized our own meeting through Zoom to decide which topic. Most of us are interested in SDGs 4, Quality Education and SDGs 3, Well Being. We finalized the topic to be SDGs 4, the quality education. Then we discussed more into details we want to be in the presentation. There are some challenges for us which was the language, time management and internet connection. In my point of view Thai students have done well in speaking and communicating in English. For Taipei students, mostly are master's degree students, did great job. Two of our Taipei members are teachers so, they help us a lot related to the topic of quality education. And for Japanese students, some were fear to speak in English and had less confidence, but we try to encourage them to speak. Our team's name was 'TJT' stands which are the beginning letters of the three country, Taiwan, Japan, and Thailand. We decided to compare the international education ways of learning and doing activities before and after the pandemic of covid 19, find problems and solutions that each university has provided to the students. Then we separated ourselves to gather information of each university and added all information in Google document.

For session three, slides for the presentation were prepared by our team members and the preceptors represent each university. I volunteered to share the presentation and was assigned to speak for the introduction part, then master student from NYCU spoke about reasons and relevance of the theme and current situation of three university. Japanese student from Kagawa spoke in the part of history of the issues and actions have been done to solve these issues. Lastly, Thai student who applied for NCYU presented about possible solutions and project outcomes. I think our team has done well and we make some friendship between us. Although there were some obstacles in language and time, we still gain experience with other students in other countries. I hope we can meet each other or participate this kind activities when the covid situation turns better.

15 Teerapat Kongrit

Experiences with the Student Sessions

My name is Teerapat Kongrit or people called "ice". I'm from faculty of science Chiang Mai

University, Thailand. I was born in Phang-Nga which located in the south part of Thailand. My team was presented SDGs 11 which about sustainable cities and communities. In detail, my group significantly focused on the problem that occurs in Japan, Taiwan, and Thailand. The problems in Japan, we focused about the urban management. Taiwan is about aged population increase. And Thailand focused about the pollution such as haze, smog, and transportation. My participation experiences in session 1, 2, and 3 are about the idea. Because the group have decided who will be the represent about the SDGs 11. So, my job is about gave an idea for my group such as the problem in Thailand and Japan. Those are the problem that i have mentioned and gave the details about those problems and solutions also. To be more preciously, in session 1 we build our communicate to me more general and then we started to discuss about what topic we are going to present. Then, session 2 my group discussed about the group name which took time about 1 and half hour to finished only group name. After that we discussed the details what we are going to present. In this part as I mentioned before, it's a lot of information and knowledge that I know. Moreover, it's extremely hard to convince them to use this information. And the last session is about checking the presentation and practice for who are the representative about SDGs 11. In this session was the most fun part because within group we communicate, discuss, suggest, and adjust a lot for the perfection of presentation. Lastly, the experiences that I received from this Trilateral Symposium are the friendship, communication skills, and the connection both Japanese and Taiwanese which are very essential for me.

16 Tremaine Joshua Sanchez

Evaluation Report

This has been a great experience for me, something I'd be doing again. So, the three things I have learned from the sessions is building up my courage to speak publicly, having been chosen to be leader made me be a better listener and lastly learning how to use my voice.

The first thing I learned was being able to speak to different people better which was I problem I was dealing with, I've always competed in speech competitions, but this is different because there is no script no information for me to read it is all from the head. The first student session made me feel more confident in myself also by speaking to people I do not know made me more comfortable in the next sessions.

Other than that, being chosen as team leader gave me more responsibility than I was thought to have also being a first-year student made me hesitate in engaging to anything because all my team members are older which made me doubt myself but after the first sessions the work paid off. Being the leader made me realize how much a leader need to be a good listener.

Lastly, I got to use my voice without the feeling of being embarrassed because everyone were great listeners willing accept other opinions also respecting opinions being able to use my voice made me more confident in everything I do academically or even socially having a voice to express my opinions.

The benefits from the student sessions were useful for me to use in the future all 5 teams 5 different goals made me more interested in the SDGs in the future I'd love to be an Environment

Conservator helping the environment in any way possible. Thank you.

Tremaine Joshua Sanchez Chiang Mai University (Environmental Science)

Student reports of National Chiayi University

1 Chou Ching-Chieh

I am glad and honored to be able to participate in this three-school seminar. In this meeting, I have learned three things that impressed me.

First of all, I found that there are subtle differences in the personalities of students from the three countries. Japanese students are generally shy, Thai students are more enthusiastic and braver to express their opinions, and because of the cultural heritage of Taiwan's integration of East and West, some students are shy and reluctant to speak, and some are enthusiastic.

The second thing, through the exchange of students, I found that even if Thailand is so large, it faces many of the same problems as Taiwan, such as high housing prices in the city and congested traffic.

Japan is indeed a leader in developed countries. Many common problems between Taiwan and Thailand seem to be properly resolved in Japan. We can use Japanese prescriptions as a reference.

Finally, because we are facing COVID-19 together, we discussed in depth about each country's vaccination situation and found that Taiwan's vaccine policy is actually doing quite well, not as bad as the domestic opposition party said.

Participating in this seminar allowed me to dare to communicate with foreign customers in the future, and also enhanced my English conversation skills during the preparation process. After graduation, I hope to be a management associate or PM in a listed company. This experience enriches my resume, and also makes me more familiar with the foreign language environment, and will be calmer when facing the test of overseas business trips in the future.

Author: Chou, Ching-Chieh,

National Chiayi University

2 Kai-Ling Hung (Kelly)

What I Learned from SDGs in Quack Quack Team

When I know I'll join a trilateral symposium, I was looking forward enjoying the process but a little nervous for my not very good English. Before getting in to the link of meeting, I even didn't know how to use Zoom. It's actually a golden experience for me to make friends with other countries students. On the first session, all the professor and team members are kind, so I was more confident to talk my opinion. And I learned many about the opinion about SDGs from team members. That was so good to share our opinion and discuss during the meeting.

On session 2, there was the team meeting for us to choose a sub-title by SDGs goal 3. Everyone had collected some information about Well-being and health. From this session, I was aware of a lot of problems from our three countries. Take Thailand for example, "Traffic accident" is

a crucial issue that there were many Thai died from it. As for Japan, suicide problem is getting worse to young people and Taiwan is more focus on chronic disease. It's difficult to decide a main idea what we would choose because there are numerous problems in Goal 3 and different from each country. Last, we though the suicide issue is important. We communicated about suicide situation in Taiwan, Thailand and Japan. We found that the age who commit suicide is getting younger and three countries had common problem, so we decided this to be the issue what we want to solve.

During the preparation, we practiced and communicated often. Last session was the presentation for five groups. I was so excited to present the result to others group and hoped to learned from all SDGs members. Every group had their own issue and goal, its pretty good to learn about the SDGs goal from everyone. Such as the pollution issue from Team 2, they provided some constructive opinions to solve the problem. For example, strengthen the connection between transportation systems and made the compare by cities. Team 3 was talk about "No poverty" issue. They told us the reasons, impact and the solutions before and after covid-19. I think all groups were excellent and good for the presentation.

Last but not the least, I have made some good friends from three universities in the Student Session and I thought this was an unforgettable experience. I am so proud of our Quack Quack members that all of them are kind and thoughtful. I learned a lot from them, such as searching for information and how to express my own opinion in English and so on. It's my first time to meet and learn with students who came from other countries. As a student majoring in Early Childhood Education, I think it's crucial to shear the SDGs to children and tell them to have a kind heart to protect our Earth.

3 Munlika Rattaphun (Li-Ting Wang)

Lesson Learned from the 1st Trilateral Symposium on SDGs

(a) Explain three lessons (things) you learned from participating in the Student Session.

Three things that I learned from the participating in the Student Session:

1. Understand facts and problems on SDG. Before I attend this conference, I have not enough knowledge about it. After the meeting finished, there are 5 from total 17 topics were present, including SDG#1 No poverty, SDG #3 Good health and well-being, SDG #4 Quality of Education, SDG #5 Gender Quality and SDG #11 Sustainable cities and communities. Each team reports the current situation and problem from each country, making us understand more clearly.
2. Learning about the impact of covid-19 on SDG. We discuss about how covid-19 has an impact to each SDG goal. For example, we report the current situation on SDG1 from each country and try to capture the multidimensional effects of the pandemic. We found that the pandemic pushed many people into extreme poverty and also widen the gap between people living in rich and poor countries.
3. The solutions on SDG. After the discussion on facts, problems and the effects of covid-19. We shared the information about what are the solutions and actions have been done to

solve these problems. Finally, we discuss about each solution and summarize it in terms of pros and cons. Therefore, many perspectives are obtained from many members and different countries to find a good solution.

- (b) What is the relationship (significance or benefit) between the lessons learned from the Student Session and your studies or future career?

There are many benefits of session learned to my work in the future. For example, my current work related to the computer science and education. So, some topic from the discussion on SDG#4 Quality of Education can be my research topic. I can combine my knowledge to analyze and process information to developing some solution that can help to improve the quality of learning.

4 Pei-Ru Huang (Yugi)

On the first day of symposium, I met my group members. It was really excited to talk to many people from different countries. I felt a bit nervous because I didn't have chance to talk in English with many people. Although I learned English for many years, I lacked of opportunities to practice it. Everyone was friendly, so the conversation was pleasant. In the second meeting, I recommended myself to be the leader. Our team started to work on the preparation of presentation. I assigned the work with our team members and it trained my team cooperation capability. In the process of discussing presentation with members, I tried to speak Japanese to students from Kagawa University. My Japanese was not good, however, students from Kagawa University were nice and encourage me a lot. I talked to them and I could learn Japanese by speaking and sending message to them. For communicating with my foreign partner better, I studied my English and Japanese harder than before.

I was interested in commerce industry. The one of the important abilities of working in commerce is language ability. I learned English and Japanese for communicating foreign language well. The symposium let me have chance to talk to foreigners. I made a lot friends and improved my cross-cultural communication skills and English speaking by talking foreigners online. It was very precious experience and I had a great time. Although I could not talk to them in person, I still felt the connection between us. Even though we could not meet our friends or relatives during the pandemic, we still cannot forget to keep in touch with them. As long as we fight against virus together, the pandemic will end one day.

5 Shen Yun Chia

Q1. Three things learned from participating in the Student Session.

- (1) Teamwork

Working together can build on the talents of different teammates. Collaborating on a project fosters a desire to learn that is sometimes lacking in lonely work. Individual experiences that are quite different from those of my companions have taught me a lot. Teamwork also helps me discover fresh perspectives by maximizing the group's common expertise.

- (2) International Student exchange

International student exchange allows students to learn about diverse ways of thinking and learning to gain a better understanding of different cultures. I enjoy meeting new friends from Japan and Thailand, and I hone my English skills with my teammates during frequent team meetings.

(2) Learn from SDGs

The SDGs are universal goals for all people but I'm not seeing the whole picture about this topic before the conference. I learned a lot from people from various backgrounds who motivated other teams to take action for a better world and healthier planet. This experience has given me a deeper understanding of the project, and also sparked my interest in the field.

Q2. What is the relationship between the lessons learned from the Student Session and your studies or future career? Describe in one paragraph (4 or 5 lines).

I work as an art teacher. In the future, I'll not only prepare and make sure we have enough art supplies, but also look into how we can help limit global warming and care for our earth. I may strive to do so by providing empowering, action-oriented education that is relevant to children's everyday interests and concerns. We have the potential to face the climate crisis and establish a more sustainable world by simply altering our behaviors and adopting choices that are less detrimental to the environment.

6 Ting Hsuan Huang

A. Three lessons (things) I learned from participating in the Student Session :

- English speaking practice and improvement.

I used to rarely have the opportunity to practice English speaking skill, and I often had to listen to the way of native speakers talks through TV, movies, and videos. However, this meeting made me use English as a communication tool for such a long time. It made me dare to try to speak out my inner thoughts in English, and it gradually increased from the first to the last meeting. It is a precious and unforgettable lesson for me.

- Issues that happened in other countries.

Our team members proposed to discuss the impact of global covid-19 plague on extreme poverty and people's living. For example, in Thailand, people have to pay for the vaccinations themselves instead of being distributed and paid by the government. Moreover, I learned that the disaster caused the original extremely poor population, which has been declining year by year, has unfortunately increased during these three years.

- The importance of pushing SDGs further and forward.

I didn't know about the SDGs project before, but now I feel that every project in it is set up for the world's progress and equality. I also know more about the different countries from the reports of each group. Sometimes things will encounter difficulties and regress, but sometimes they will improve, and we should work hard to push the world towards the goal of SDGs.

B. The relationship (significance or benefit) between the lessons learned from the Student Session and my studies or future career :

I am a student in the Department of Horticulture, and my research goal is plant breeding.

Although my group discusses no poverty this time, it has little to do with my research field. However, among other SDGs, like no hunger, as far as my research is concerned, I may work hard to breed high-nutritional and easy-to-plant varieties, or set up special regulations to give priority to high-quality varieties for planting in poor areas, etc., and use methods within my abilities to allow my strength to provide dedication to the equality of the world.

7 Zhi-you Lin

Student Session 1st Trilateral Symposium on SDGs

For the session held from three countries of schools on SDGs, I have learned a lot about the sustainable development goals and what they're working on.

While discussing the project during the meeting, the questions are being gradually figured out by sharing opinions with teammates. It's really a good chance to get to know about the problems that we faced at the moment and also a good way to work together to find out the solutions. Take the SDG 1 for example: most of the people in the world are facing the shortage of life resources, lacking foods to full themselves. That is what poverty caused, and the new pandemic has made it worsen. Tons of thousands of people have lost their jobs due to the restriction of specific occupation, which causes the increase of poverty ratio.

For those who lost their jobs, or lived in poverty originally, finding ways to improve themselves are also vital for living in the changing world. And those who are wealthy, or having the power to make decisions, should have come up with new policies to protect the human rights of these people. Although it's hard to deal with the problems with individual effort, but if people worldwide come to work together, the change is the near future.

In this session, the acquisition on acknowledge of SDG is precious, the memory of exciting discuss with new, friendly teammates from both Taiwan and other countries is also impressing.

It's quite a pleasure lesson to learn, thank you for holding the session, hoping to see you soon.

Student reports of Kagawa University

1 Hanae Urayama

My review of joining SDGs sessions

Three lessons from student's session

Firstly, I have learnt how interesting that we discuss on same theme from 3 different countries. Our team chose “sustainable cities and communities” and my thoughts and their thoughts were completely different way of thinking. They came up of air pollutions, public transportations and house pricing. I did not even think about that kind of issues related to sustainable. Therefore, it was interesting to listen to their opinions.

Secondly, focusing on our theme, I have never thought about my city from that perspective. I came back from South Africa and for my eyes, Takamatsu looks wonderful city and no issues here, I thought. So, it was difficult to see my city on sustainable way. It was good chance to know more about Takamatsu and good to know Takamatsu is smart city, which I had not known until the final session.

Thirdly, I enjoyed the 3rd session and learnt from the other groups. Especially it was interesting for me to listen to the gender issues. In Japan, we seldom think or involved because of gender. So, we have not enough time to think of this issue. However, this issue would be impacted in futures and it depends on their cultures, religions or careers. I was interested in especially presenting about LGBTQ.

Benefit throughout this session in my future

Discussing in English was never easy however I learnt it did not matter only if we had passions and we had our own thoughts. And it is very hard to tell people about my country and city, I must need more to know and love. I enjoyed the discussions with Thai, Taiwanese students and I wish we could see in person and discuss with more passions.

2 Hayato Tanaka

Instructive Student Session

(a) What I firstly learned from participating in this student session is that we can cooperate to solve some problems with people around the world by using English as a tool. I realized how useful to be able to speak and write English. If we covered the same topic, SDGs, and discussed about it with only Japanese, I think we never get abundant information which are around the world. However, we were able to gather them which are based on Thailand, Taiwan, and Japan at this session.

Secondly, after I listened to all team's presentations about what the problems for each topic and the solutions for that, I recognized even students may be able to solve problem about SDGs. For example, we students can improve quality education by giving teachers our feedback honestly in questionnaire.

Thirdly, most of the SDGs which five teams covered like suicide, poverty, and education are being damaged strongly by COVID-19. So now the problems became more difficult to solve and

which means we have to understand them deeply and cooperate to put them into practice one another around the world.

(b) What I learned which is related to my future career is that it's quite become interesting for people around the world to explain our culture. When we were talking about dress code, I explained Japanese elementary students have to put on short pants even during winter. Then students from abroad in my team got interested and the conversation became lively by comparing our culture more. I would like to exchange our culture as any examples when I have discussion in the future. It should be interesting for us and the conversation will become stimulated.

3 Hironobu Murakami

Question

a) our group study about SDGs target 5. Target 5 is gender problem. we investigate several view point about this.

Topic 1 is biased view on men and women. For example, we think female like pink, and men like blue. this trend is created by community,

In Others, we deal with abuse in women, and LGBT+.

b) in this session, my English skill is low. So I can't join positively. But I learn many things. Naturally I could know SDGs, I also heard an interesting story about the national culture of the students who attended this session.

Now, as part of my class, I am studying what femininity and masculinity are of interest in this session. I don't know if it will lead to a career, but I think that talking about gender is important for socializing, so I will continue to deepen my understanding of gender.

4 Kentaro Tanaka

Trilateral Symposium on SDGs

Title: What I learned through the symposium

(a) Explain three lessons (things) you learned from participating in the Student Session.

Write one paragraph (4 or 5 lines) for each lesson learned.

1. Session: I learned the difficulty of communicating in English and the high level of English communicating proficiency of Taiwanese and Thai college students. I was studying English, but when I communicated in English, I had a hard time because I couldn't get a good word. This session had a very good time as the chances of communicating in English have decreased since the coronavirus was widespread.
2. Session: I learned about SDGs. So, in this session, I was able to hear valuable opinions about SDGs from people from different countries and different specialties. I was interested in No.9 and 11 before the group discussion, but after the discussion I was also interested in No.3 and No.5. I learned that ensuring a healthy life and promoting welfare are essential for sustainable development.
3. Session: I learned more about SDGs. Our group presented about the suicide in each country. I was one of the speakers, so I researched the suicides about Japan and Thailand mainly using

the internet. It is very hard for us to present in English, but our team leader's Shelly and Mr.Lrong Lim helped us during the online symposium.

(b) What is the relationship (significance or benefit) between the lessons learned from the Student Session and your studies or future career? Describe in one paragraph (4 or 5 lines).

I learned that when you solve a problem, you should solve it from all perspectives, not just one perspective. Since I major in disaster prevention engineering, I thought it was important to create a disaster-resistant city to create a city where people could continue to live. However, I realized that it is important not only from the perspective of disaster prevention, but also to improve the medical system for living a healthy life and to improve the environment for receiving high-quality education. In my future career, I will try to solve the problems from multiple perspectives.

5 Li Xiaodong

I was very happy to participate in this meaningful activity for the first time. From the introduction of the SDGs of the first session, as well as the greetings from three university teachers, I am full of confidence. The Sustainable Development Goals, also known as the Global Goals, were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. From the lessons I learnt the 17 SDGs are integrated—they recognize that action in one area will affect outcomes in others, and that development must balance social, economic and environmental sustainability. What interests me most is the fifth group about explanation of goal 5-gender equality. Talked about a lot of current social problems about LGBT, and gave a lot of helpful solutions, which are very useful.

I am coming from China. This is the first time I take part in the international activities. Our team is Team2-LCS (Living comfortable and sustainable). I am honored to be the leader of this team. Through this team cooperation, I learned a lot. Through the cooperation with the three co-leaders, with the active cooperation of the team members, we strive to collect data and actively to become presenters. Our team is concerned about the sustainability and clear city. My major is medicine. What is most relevant to my major is goal 3-good health and well-being. Let me have more confidence to learn my major well and benefit those suffering from disease. Thanks for the opportunity to learn and communicate with students of other Universities under COVID-19.

6 Nao Matsuzaki

My experience of SDGs student session

(a) 1st session

We decided about one goal of SDGs, and Our goal of SDGs was gender equality. In this session, there were many students from different departments. When we talk about our goal, I'm interested in many opinions each student. My study is marine science. So, I don't much knowledge about gender equality, and I was worried if I could do it well.

(a) 2nd session

When we talked about our goal, actually I couldn't understand about meeting. Because my listening skill of English is very poor. Students of CMU and NCYU are very good skill in English,

and they have good many ideas. During meeting, they ask me (KU student) about problem of gender equality in Japan. However, I couldn't answer this question. From this experience, I need to study more about English and not only my study but also other fields.

(a) 3rd session

We thought about issue and solution about each gender. And then CMU and NCYU students summarized these ideas. I could learn about each gender problem (Female, Male and LGBTQ+), especially LGBTQ+. Because it is difficult to think about solution about gender equality. However, I'm interested in these problems. And I need to know about it. So, it is good time to learn gender equality of each country for me.

(b) What is the relationship (significance or benefit) between the lessons learned from the Student Session and your studies or future career?

I could learn about some SDGs goal in diel in presentation (Final session). I got good benefit something, especially knowledge of LGBTQ+ problem. Now I didn't face to LGBTQ+ problem. However, LGBTQ+ people sometime are limited career. So, more than 53 % of LGBTQ+ workers hide their identity at their workplace. After graduate Kagawa University, I will get job for the future. Maybe I will not get job relate with gender equality. However, if I work, I meet many kinds of people and face to kinds of problem about gender problems. I want to understand gender equality accurate knowledge and activities.

7 Rokeya Khatun

Title of report: "Things that I have learned from participating in the Student Session and its importance in my future career"

It was my first experience attending on Trilateral Symposium on Sustainable Development Goals (SDGs) and was great. This session gives an important lifelong lesson and I think these are the catchiest thing that I experienced from this session.

Teamwork skills

Getting involved in the student sessions was a great experience to work in a big group from three different countries. This session allows me to explore new knowledge like SDG goals and making various tasks that wouldn't have done if I had been alone. It also enhances both my individual and collective learning. This is because working in a group exposes us to new perspectives, styles of thinking, and disagreements.

Improves communication skills

This session also helps me to improve my communication skills, only through social networking as each member staying in three different countries. It provides an opportunity to improve collaboration and provides a larger capacity for brainstorming different ideas. Student session helps me to learn how to share my opinions or ideas and responsibilities, how to listen to other people's opinions or ideas and provide feedback.

Learning innovative ideas

As each member of our group was from different background so we have different ideas as well as different ways to learn. By working in groups, these differences help me to exchange new

ideas, creative thinking, and disagreement during the selection of our SDG goals and making our PowerPoint presentation on them.

Importance of these learning

Teamwork is a staple part of academic life. The knowledge that I experienced from this session is how to build my teamwork skills, communication, planning, problem-solving, and negotiating. Implications of these combined efforts are necessary for every aspect of life for a better outcome.

8 Yumi Miyashita

The Student Session Trilateral Symposium on SDGs Report

(Think, Discuss, Act and change for the better)

Three things I learned from participating in the Student Session

The first thing I learned is the importance of discussing the idea from many aspects. My team thought about the importance of SDGs goal 3, "Health and wellbeing". We chose to think about suicide problems because it is a big problem in Japan, Taiwan, and Thailand. I learned that economy is the same reason to commit suicide in all three countries. Our team had a meeting for about 3 or 4 times and discussed the problem about economy as well as what kind of situation we are in because of Covid-19. As for helping people from poverty, we came up with same problem in our countries. All our countries have livelihood protection system, but a lot of people don't know about it and it's difficult to apply for it because they must fill in many difficult papers. I think that we can find a solution for it if all our countries work together. I was able to widen my view. I want to thank my wonderful team members.

Second, I learned about global warming. In Japan, solar power became popular as a clean energy. I was always wondering if solar power is actually "clean", because they produce CO₂ while making solar panels. Throughout this session, I learned that it is difficult to recycle solar panels. I think the best solution is to reduce the amount of energy we use, but it is difficult because we can't live without lights or air conditioner. I thought that it is a good way not to use a car too much. In Taipei, there is MRT. I think using bicycles and public transportation are good ways.

Third, I learned about LGBTQ. I have always thought that Japan is behind the clock about LGBTQ. Some prefectures don't allow same-sex marriage. I think that it should be allowed. When thinking about school uniforms, girls wear skirts and boys wear pants. I think that it is a good way to start by letting students choose their uniforms, but there is a problem. In Japan, a lot of people try to be the same as others, so it is very difficult to choose something different from others. Students concern about how others think of them so even if they want to choose their uniforms, they can't. I want everybody to understand about LGBTQ and to make it normal.

The relationship between the lessons learned from the Student Session and my studies or future career

I learn that discussing with members from many countries make me widen my view. I found out that things I thought "normal" is not actually "normal". My team members were in various grads, and they wanted to be scientist, teacher, nurse, and so on. They had a deep thought about

what we should do to stop global warming, suicide problems, and other problems. In the future, I think that I want to continue widening my view by exchanging opinions. I also want to value the relationships with my group member from this session.

Supervisor reports

Team 1 Supervisor Report

Professor Dr. Lrong Lim, Marine Environment Cleaning (MC)

Associate Professor Mika Shioi, Japanese Language

Assistant Professor Dr. Benjamas Suksatit (Nursing)

Ms. Sabrina Concas (BNA) International Relations Division

This team had a total number of 13 students. CMU and NCYU both provided five students each, while KU had three students. The team was backed up by three supervisors and a coordinator from CMU.

After the overall guidance in Sub-session 1, the team selected a leader from among the pre-determined 4 co-leaders. Ice breaking followed with the main theme being 'which of the SDGs interest you the most'. The team then went on to decide on the topic of 'suicide' which falls under SDG number 3 Health..., and to name the team 'Quack Quack Team'.



In Sub-Session 2, the team members got together to discuss the details of presentation. Three task groups were formed: one for gathering information, another for preparing the PPTs, and the third for making the presentation.

They decided to split the whole process into three parts: with each part focusing on Thailand, Taiwan, and Japan.

In Sub-Session 3, five members made the presentation smoothly.

On reflection, members of Quack Quack Team were found to be cooperative, friendly, and willing to learn from one another. I think the members benefited a lot by engaging one another and I hope they will continue to keep in touch in the future.

Team 2 Supervisor Report

Team Name: LCS (Living Comfortably and Sustainably)

Team members:

Supervisor & Coordinators

Dr. Tanarat Rattanadamrong-aksorn (CMU), Ms. Supanida Kahanurak (CMU), Dr. Chew Hui Yan (KU)

Students:

CMU

Teeparat Kongrit, Chadarat Silatham, Songfa Aidan Maxwell L, Chonnipa Thanakiatsakul, Patnaree Tapanya

NCYU

Min-Chi Tu, Liang-Chun Chen, Chou-Ching Chien, Yi-Jing Wu

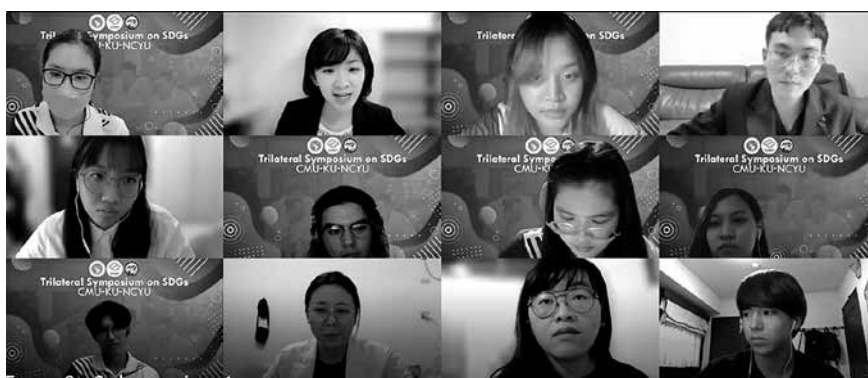
KU

Edward Sogo Lutes, Li Xiao Dong, Hanae Urayama

Sub-Session 1 (1st September 2021 17:45~18:30)

The first session started after the opening ceremony. First thing we did was self-introduction. All the members introduced their names, courses, hobbies, SDGs theme they were interested in. After self-introduction, Li Xiao Dong from KU was selected as the team leader and a Line group which included all the members and supervisors were created for discussion.

After the first session, the members continued their discussion about deciding the SDG theme via LINE. Members who were absent for the first session were also added into the LINE group. The members created a poll and they voted Goal No. 11 (Sustainable Cities and Communities) which covered most of the interests of the members as their main theme. Relevant information was also shared among the members via LINE. CMU coordinator Ms. Supanida had been very supportive by sharing a lot of relevant ideas and materials into the group. Prior to the second sub-session, the members had one discussion about the issues related to Goal 11.



Sub-Session 1 (Team 2)

Sub-session 2 (8th September 2021 15:30~17:30)

KU supervisor, Dr. Chew started the session by sharing some information regarding Goal 11 from UN webpage. Then, in order to encourage all members to speak with less stress and come out with more ideas, they were divided into 3 breakout rooms for discussion for about 1 hour. The discussion mainly focuses on 3 issues: inadequacy of infrastructures and facilities in the cities/

communities; environmental issues in the cities/communities; impacts of COVID-19 in the cities/communities; as well as solutions for all these issues.

Students jotted down all ideas on PPT slides. Supervisors Dr. Tanarat and Ms. Supanida from CMU and Dr. Chew from KU joined all the discussions of 3 rooms and gave suggestions.

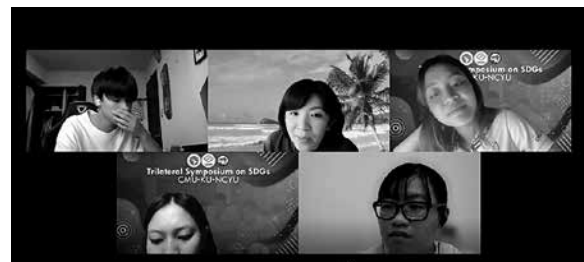
For the final 30 minutes, students came back to main session and combined their ideas from each group into one PPT slide.

Due to time constraint, 1 of the co-leaders from CMU, Aidan took up the initiative to continue doing the slide after the session.

All the members from the 3 universities took part in discussion quite actively. 3 members (1 from each university) were selected upon agreement of all members to do the presentation in the final session.



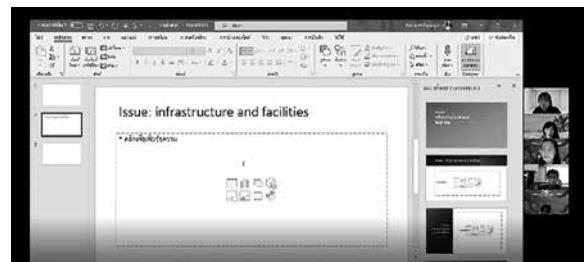
Sub-Session 2 (Team 2)



Sub-Session 2- Breakout Room 1 (Team 2)



Sub-Session 2- Breakout Room 2 (Team 2)



Sub-Session 2- Breakout Room 3 (Team 2)

Sub-session 3 (22nd September 2021 15:30~17:30)

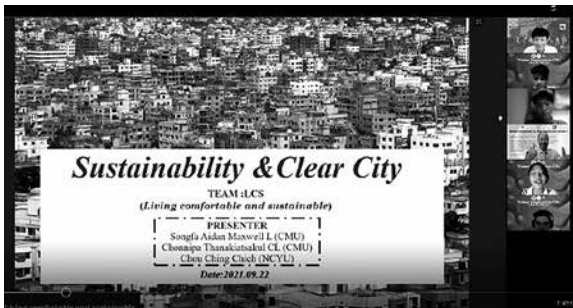
On the day before the final session, Team 2 had a final meeting to finalize the presentation slides. Supervisor from KU, Dr. Chew and Ms. Supanida from CMU joined the discussion.

Co-leader Chen, Liang-Chun from NYCU finalized the presentation slides and shared with the presenters Chonnipa Thanakiatsakul, Chou Ching Chieh, Songfa Aidan Maxwell before the final presentation.

Team 2 made a very good presentation in terms of the content. As the theme selected was closely related to most of the participants, during the Q&A session, many questions were asked to Team 2 and the team members were able to give satisfactory answers. One of the takeaway points was when VP Tokuda Masaaki mentioned about Takamatsu is a smart city but most of the members from KU did not know about it.



Sub-Session 3



Sub-Session 3–Presentation by Team 2



Sub-Session 3–Presentation by Team 2

Team 3 Supervisor Report

Team Name “HOPE”

Member		Supervisors
CMU	5 students	1
NCYU	5 students	2
KU	3 students	1
13 ladies and 2 gentlemen		

1st Day

Students introduced themselves each other.
 Each student showed his/hers interest on SDGs goals
 They discussed what target they should select and had active exchange of opinions.
 As a result, No1 Goal “No poverty” was selected.

2nd Day

4 co leaders tried to lead the discussion. But it was difficult to go ahead. Leader should be selected. It took sometime to decide the leader. Ms Pei Ru Huang kindly raised her hand. After that, she lead the discussion . All member got the assignment

3rd Day

Between 2nd day and 3rd day, they discussed hard to make the presentation through Line. The Presentation regarding “Poverty situation and Solution under Covid -19” was completed and showed.

They continue to contact each other.



Team 4 Supervisor Report

The Trilateral Symposium on SDGs offered the students from Kagawa University, Chiang Mai University, and National Chiayi University a great opportunity to collaborate on SDGs and connect with new friends, in order to create a group presentation.

Over the course of three sessions, Team 4 (TJT) was able to succeed in the tasks at hand. The first session offered the members a chance to get to know one another, as well as collectively decide on the topic and SDG for their presentation. Soon after the members gave self-introductions, the leader and co-leaders were chosen, then the team discussed ideas for their presentation. It didn't take much time for the team to come to a consensus on the SDG theme of Education. During the first session, the two supervisors from Chiang Mai University provided the team with excellent advice, which encouraged the students to collaborate and understand the roles of each member. At the end of the first session, the leaders of Team 4 felt that a LINE group should be created so the members could have seamless communication. This proved to be invaluable, seeing a marked progression with the presentation between the first and second sessions. When the second session commenced, there was a clear plan, as well as a draft of the presentation PowerPoint slides. The coordinators were pleasantly surprised to know that the members were in daily contact, and in turn friendships were beginning to form. During the final session, each team was given the opportunity to show the results of their efforts, and it did not disappoint. Looking back, each group left a lasting impression with their well-orchestrated presentations. Moreover, the presentation themes were diverse and thought provoking.

The Trilateral Symposium on SDGs met and exceeded its purpose. It was clear the students came together and discuss SDGs in a formal and academic setting. Additionally, the students were able to meet new friends from other countries and cultural backgrounds. The symposium was a reality check for the students for they had to communicate and convey ideas using English, whilst being able to judge how well they could function in such an environment. Moreover, the students who attended, have commented about the trials and tribulations of joining the symposium, but for the most part, the experience was definitely enlightening and important to their lives. Students mentioned that the positives outweighed the negatives, and they would welcome the challenge again if the opportunity arose.

Team 5 Supervisor Report

CMU supervisor: Chakrapong Kuensaen

CMU staff: Ronnakrit Henglertrattana

KU (MAIN) supervisor: TAKAMIZU Toru

Sub-session 1

The members selected the leader very quickly by discussion.

The students exchanged LINE ID through a jointly edited google document. KU supervisor prepared the document for this purpose. CMU supervisor advised the leader to set up a LINE group.

Sub-session 2

At the beginning the supervisor asked the leader to lead the discussion, and basically, he controlled everything. It was successful by the cooperation of all members. They selected #5: Gender Equality by voting after some discussion. Some members wanted to choose a topic that is directly related to their own major. Eventually they chose a more general topic.

While members were discussing, CMU supervisor continuously encouraged students to express their opinions, mainly through chat. For some of the members, this topic was not so familiar, whereas some commented actively and providing a lot of examples from their surrounding environment. The leader shared a written summary of the discussion so that they could catch the points clearly.

They did not have enough time to decide the team name and reported it several days later.

Sub-session 3

Their presentation has three parts: from viewpoint of male, female, and LGBTQ+, respectively.

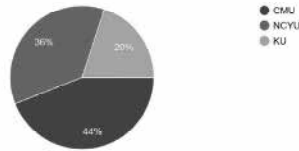
In part 1 they discussed the social pressure for men to choose “blue” as opposed to “pink”. They also touched “makeup” for men. In part 2 they focused on abuse in women: they talked about rape victim-blaming, body and skin shaming, domestic violence and so on. In part 3, the focus was on LGBTQ+. The topics included how parents should behave, career limitations based on stereotypes, and legal rights of LGBTQ+.

The above description does not cover everything, but their slides were clear and concise. Their presentation was a success in the sense that they summarized and presented wide range of topics regarding SDG#5. If they could provide more concrete solution, in other words, what they could do directly, the overall quality would be one step higher. However, they provided us the things that all societies must face at this moment.

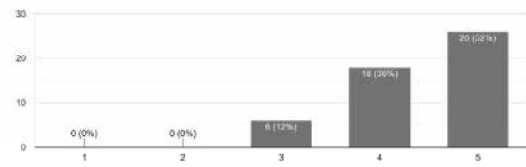


Results of the survey questionnaire

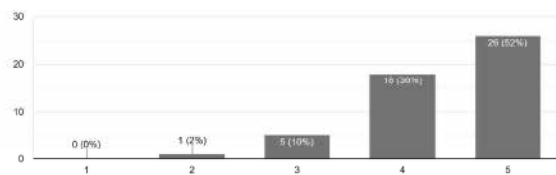
University
50 responses



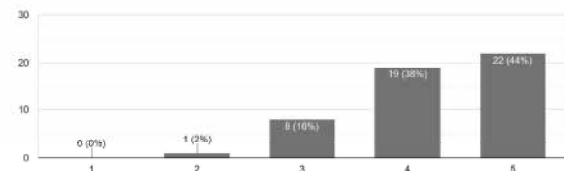
How would you rate your overall experience in the symposium?
50 responses



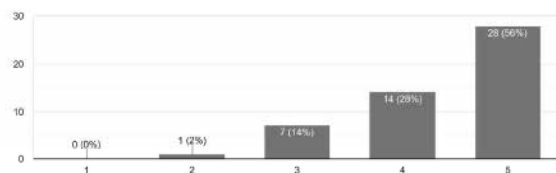
How would rate your experience in Sub-session 1: Briefing & Selection of SDGs theme?
50 responses



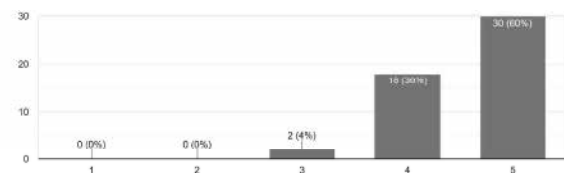
How would rate your experience in Sub-session 2: Preparation and Exchange of Views among Team Members?
50 responses



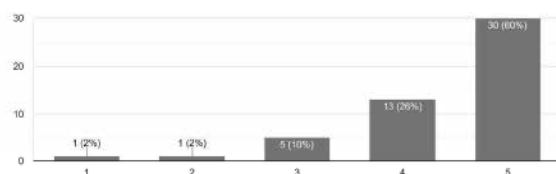
How would rate your experience in Sub-session 3: Presentation & Q&A?
50 responses



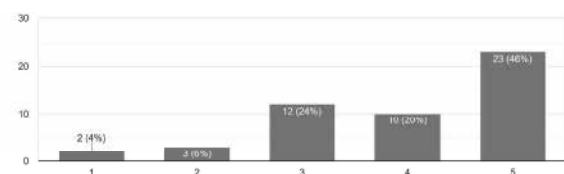
Do you agree that the sessions contributed to your understanding of SDGs?
50 responses



Do you agree that the lessons learned are beneficial to your studies and/or future career?
50 responses



How many friends did you manage to make in the sessions?
50 responses



Open-ended survey questions

If your answer is 5 (for example, Strongly agree) for any of the questions above, what aspects of the Student Sessions were most useful or valuable? (31 responses)

- Sub-session 3: We have learnt many aspects about SDGs in each group and each country.
- For me exchange the knowledge from different perspectives is very open my mind
- I think session 2: Preparation and Exchange of Views among Team Members because my teams a good team when I have a problem, the team can help I'm proud of my team.
- Preparation and Exchange of Views among Team Members
- Teamwork, communication, be kind with members
- Sharing and giving opinions from different perspectives gave me a wider look to what is happening around the world.
- Preparation and exchange of views among team members
- Help each other
- Communication between students
- Sub-session 1: Briefing & Selection of SDGs theme
- International cooperation and cultural exchange with my team members
- My team had a meeting for 4 times in order to discuss the content. At that meeting I was able to exchange my opinions about SDGs and the life I'm having in Japan.
- It was a good experience for me to learn about the economy of Thailand and Taiwan.
- I enjoyed talking with my teammates.
- I agreed, because the student session makes us close, cooperation among the team members was strong for selecting goals and preparing the presentation.
- I have learned many things from the innovative ideas of other members.
- Work distribution and communicating ways all the things we enjoyed, and we also enjoyed our unity.
- Making new friends by the self-introduction session. And also, thanks to our team leader helping all team 5 members decided the subject we were going to report.
- It a great English environment to make us use more English to talk with someone and have a presentation.
- When listening to every group presentation, I learned the details of each SDG topic that each group chose from many perspectives that I've never been considered before.
- Every presentation and slides were great.
- The discussion and presentation are very useful for improving my English speaking
- Improve the ability to use English as a conference negotiation
- The lesson learned is useful for my future
- I think the theme of this seminar is actually closely related to our lives, but I haven't learned about it.
- In addition to discussing SDG issues in this seminar, it is also a rare experience to talk to

people from different countries in English.

- I think the Student Sessions not only improve my English ability, but also make me meet so many friends from Thailand and Japan this time.
- Communication and social
 1. To work with the students from different countries.
 2. To share the opinions with the students from different departments.
 3. Try to communicate with people in English.
- I was able to exchange opinions with students from different fields of specialization
- We will discuss the problems faced by the countries together and think about the solutions.
- This activity can communicate and interact with foreign students through simple and fast thematic forms.

If your answer is 1 (for example, Strongly disagree) for any of the questions above, would you please elaborate on what we can do to improve on future Student Sessions? (3 responses)

- my team discussed about no poverty, but I study in horticultural science which has weak relationship to this theme, thus I don't think it could help me in my research field.
- I think it hard to make friendships because we are using only 3 times meeting and i have to study along with the meeting cause in Thai it's the study time so sad
- Maybe you can choose a few students to share their experiences at the end. The meeting ended too quickly.

Any other comments or suggestions for future Student Sessions? (29 responses)

- I hope next year I will join again!
- It would be a lot better if we can do it working together on site, more development in the relationship.
- I want to go to Japan if there is a chance.
- Everything went great it was fun, but the one downside is that interaction between students felt flimsy the cause is that we were meeting each other for the first time online, other than that all is well.
- If it can meet each other maybe it's going to be great because we can make the relationship more than this
- great ! ! !
- It would be nice to move the session time to daytime instead of afternoon
- I enjoyed this session very much. I think that it will be easier for students to express their opinions if all members were divided in to five small groups to ask questions in the Sub-session 3: Presentation & Q&A.
- Thank you very much for making the wonderful session. I want to join this session next year as well.
- To me it was a great experience.

- I think the meeting time can be longer or increase the number of meetings, so that we can discuss fully.
- Looking forward to joining this symposium in Japan next year. It would be great to learn and share face-to-face.
- I got loads out of it.
- Thank you. I have great time during the symposium
- maybe assigning students who study in similar field together would be more interesting.
- But it's good activity
- During the covid 19 situation, it may be hard to communicate as we are far from each other hope the situation will get better soon. Overall I like it! ♥
- Thanks for three countries' professors supply us many opinions and having this unique experience.
- It's a pleasure to get to work with a group of intelligent students and professors
- At first, I want to say I'm really glad that I have the chance to participate in the Trilateral Symposium. I really learned a lot during the Student Sessions. I made a lot of friends, and we are still keeping in touch.
- I think this is a great event. If it will be held in the future, I would like to recommend other students to participate.
- I have one suggestion: To make sure all the students have enough time during the Student Sessions. (At least, they need to check the new messages on Line ONCE every day.)
- It's normal that everyone's free time is different. And working together in the limited time is also what we need to learn from the symposium. We should find the ways to overcome the time problem.
- As a leader, I told everyone if they are not available to finish their jobs, it's okay and I will ask other members who have time to give a hand. I think this is what a group should be.
- Unfortunately, some members only have free time on "Weekends". I totally understand everyone is busy with studying on weekdays. However, we can't only communicate with the things on weekends since we need to prepare for the presentation in 3 weeks. (Some members told me they even have no time to use Line on weekdays.)
- Therefore, I suggest that if the Trilateral Symposium will be held in the future, maybe we can inform the students that they will need to spend some time on weekdays during the symposium.
- Thank you for taking the time to read my words.
- If the coronavirus has settled down, I want to do it face-to-face
- More time is needed for discussion, so that we can have more time to discuss together and have more time international cultural exchange.

Overall summary for Student Session

Lrong Lim
Kagawa University

As the person primarily in charge of organizing and conducting the Student Session, I would like to thank all students, and staff and faculty members of the three universities who took part in the event.

There was a total of 65 students: 25 from CMU, 24 from NCYU, and 16 from KU. Five teams were formed, with each team consisting of students from all three universities. A leader and three co-leaders were appointed for each team. Nineteen supervisors and coordinators from all three universities provided support for all the teams, making the total participation number to reach 85.

The Student Session was conducted via three Sub-Sessions. In Sub-Session 1, students and support staff members assigned to the respective teams got to know one another through self-introductions. Then, all members made proposals for which SDG theme to select.

In Sub-Session 2, students actively engaged one another in their selected SDG theme, and assigned among themselves tasks for preparing the PowerPoint slides. Most teams went on to meet more than once 'off-the-schedule' to discuss among themselves the details of the presentation.

In the final meeting, Sub-Session 3, all five teams gave very good presentations on their selected topics. We would like to commend all the students for their great effort in working and studying together. We would also like to thank the Coordinators and Supervisors for their valuable assistance and guidance throughout the sessions.

An overriding aim of the Student Session was to provide a platform, an opportunity for young scholars of CMU, NCYU, and KU to get to know one another, and to engage one another in an academic setting, thus opening up a window for them to continue engaging one another after the symposium.

This aim is achieved as is revealed by the survey conducted after the symposium. Many students managed to make new friends. I am also happy to see that a majority of the students have had very positive experiences with the symposium. Their understanding of SDGs has increased, and many of them derived numerous benefits while agreeing that the lessons learned were useful for their studies and/or future career. Students also offered various helpful ideas and suggestions on how to improve future undertakings.

On a personal note, no doubt I spent much time and effort in running the sessions and coordinating with colleagues from CMU, NCYU, and KU, the experience was exhilarating. Just like the students, I learned many lessons. Hopefully, I can incorporate these lessons and ideas into future sessions.

Now, I would like to take this opportunity to mention that two months after the symposium, CMU, NCYU, and KU had successfully conducted a Joint Online Environmental Cleanup event. This was very much an 'off-shoot' of the Student Session.

Riding on this success, I took the initiative to start a new hybrid class focusing on SDG#14

(Life Under Water). Both CMU and NCYU has agreed to nominate some students to participate in this class. Furthermore, Universiti Brunei Darussalam, although not a party to the Trilateral Symposium, has also nominated some students to join the class.

CMU, NCYU, and KU have embarked on a new and exciting mode of cooperation. This mode of cooperation has certainly widened the scope for joint research and educational pursuits. All these, for the mutual benefit of our students and the wider world of learning. I look forward to working more with our compatriots at CMU and NCYU.

Finally, I hope the students can continue to cherish and build on the many friendships made during the symposium. Let us meet again at the Second Trilateral Symposium in Kagawa (after the pandemic is gone).

Certificate of appreciation

The certificate of appreciation signed by the three Vice-Presidents of Chiang Mai University, National Chiayi University and Kagawa University was issued for the students who actively participated in the Student Session.



CERTIFICATE OF APPRECIATION

Kagawa University, Chiang Mai University, and National Chiayi University awards

NAME

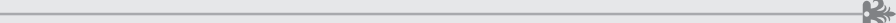
*for the outstanding contributions at the Student Sessions
Inaugural Trilateral Symposium on SDGs 2021
hosted by Kagawa University*

Assoc. Prof. Rome Chiramukrom
Vice President
Chiang Mai University

Prof. Tokuda Masaaki
Vice President
Kagawa University

Prof. Der-Ching Yang
Vice President
National Chiayi University

【 Vice-President messages 】



Vice-President messages



**Vice-President of Chiang Mai University
Associate Professor Rome Chiranukrom**

It is our great honor to organize The Trilateral Symposium on SDGs, together with Kagawa University and National Chiayi University. During this symposium, we have gained many fruitful and insightful inputs from the participants, which I am confident will lead to further collaboration between our institutes. I am also delighted to see the connections grow and new friendships created.

In this symposium we have learnt more about SDGs and COVID-19 from different perspectives through the impressive presentations. It must be challenging to learn new tools online, but I believe this symposium has given all participants valuable skills that can be further applied.

Even though this year the situation only allowed us to meet online, I feel this symposium was very successful and I hope that next time we can meet face-to-face and exchange more ideas.

On behalf of Chiang Mai University, it is an honor to be a part of this symposium and I would like to express my gratitude to Prof. Tokuda Masaaki and Prof. Der-Ching Yang for their valuable contributions, and to thank all the staff and students for working very hard during these past months in making this event possible.

Thank you.





Vice-President of National Chiayi University
Professor Chishih Chu

First of all, I would like to thank the engaged faculties, staffs and students for all of their enthusiasm, hard work and preparation. It is our great honor to participate in the Trilateral Symposium on SDGs Student Sub-sessions. I would also like to extend our sincere gratitude to the joint efforts of all the participating group supervisors, and our most cordial congratulations to the success of this event. It presents a great teamwork among the faculties, staffs, and students of the three universities, Chiang Mai University (Thailand), National Chiayi University (Taiwan) and Kagawa University (Japan). The symposium has fully attained its two aims which are to provide opportunities for young researchers and educators to introduce research work and build future partnership; and to provide opportunities for students to get to know each other.



We would also like to acknowledge efforts CMU and KU have been made on specific SDGs targets from the symposium. We have had very rich discussions during the session. This event is proof that each of us brings something unique to the table. The student sub-session provides the students of the three universities a great opportunity to engage in the crucial issues of SDGs, and gain cross cultural experience through the virtual group meetings. We are also inspired by the national experiences and innovative practices on SDG implementation shared by CMU and KU. NCYU looks forward to pushing for cooperative projects with all of you to contribute for a better environment.

Due to everyone's efforts and participation it has been an unforgettable experience, and I hope today that will be one of meaningful and happy memories for all of you. I firmly believe that the closing of this symposium is not an end, but a new era for future cooperation to make our effective themes beneficial to sustainable development. Finally, thank you all again and may you be blessed with happiness and joy! We look forward to meeting you in Chiayi again soon. Thank you all!



Vice-President of Kagawa University
Professor Masaaki Tokuda

I am extremely happy that we, Kagawa University, could host “the 1st Trilateral Symposium on SDGs” as a symbol of the friendly and tight partnership of the three universities, Chiang Mai University (Thailand), National Chiayi University (Taiwan) and Kagawa University (Japan).

In October 2019, the initial idea to have trilateral symposium was discussed with Vice-President Rome Chiranukrom, Vice-President Chishih Chu and Vice-President Ikuo Kataoka in Chiayi on the occasion of the 100th Anniversary of National Chiayi University. Then, in January 2020, when Vice-President Rome Chiranukrom, Vice-President Chishih Chu and myself met in Chiang Mai on the 55th Anniversary Celebration of Chiang Mai University, we confirmed our intention to hold the Trilateral Symposium in Kagawa in 2020 hosted by Kagawa University to strengthen our collaborative activities. Unfortunately, it had to be postponed due to COVID-19. At that time, we also made an agreement to clarify that the three universities would work together for SDGs.



SDGs is our common commitment. Universities have vital roles to play in addressing these critical global challenges and achieving SDGs. Universities have a responsibility through their teaching to equip the next generation of leaders, innovators, and thinkers to understand the global challenges facing the world and the role they can play in rising to meet these challenges. Through their research and training of research leaders, universities are at the forefront of finding sustainable social, economic, environmental and technical solutions to global problems. Furthermore, universities can pioneer innovation through their activities.

We have already had successful collaborations, some of which are closely related to SDGs, and through this Trilateral Symposium, we will be able to develop a greater number of international collaborations in research and education and also will contribute to the regional and global societies through our collaboration.

The 2 main aims of the Trilateral Symposium are to:

1. provide opportunities for next generation researches and educators to introduce activities and start collaboration, and
2. provide opportunities for our students to get to know each other, and to develop networks and friendships to study together and work together.

Based upon our agreement to focus on SDGs, we establish four core areas; namely “Sustainability and Food”, “Sustainability and Health”, “Sustainability and Technology” and “Sustainability and Society”. In this way, multi-disciplinary discussions can be encouraged and stimulated.

I am very happy to know that the all four sessions were successfully held through the

efforts of the organizers of the three universities and that attendees have already found many seeds for collaboration. The Kagawa University International Office has raised funding to support these seeds to let them sprout, grow and bloom in the future.

I have retired as the Vice-President for International Affairs end of September, and it was my great and unforgettable memory to have had the 1st Trilateral Symposium on SDGs as one of my last duties. My great appreciation to Vice-President Professor Der-Ching Yang and Vice-President Chishih Chu of National Chiayi University, Vice-President Associate Professor Rome Chiranukrom and Vice President Associate Professor Sampan Singharajwarapan of Chiang Mai University and all staff of the three universities who worked with us to make this 1st symposium in reality.

My warmest wishes for a prosperous future for the three universities and for each of you.

Towards the 2nd Trilateral Symposium on SDGs

Professor Naoyuki Hara

Greetings from Kagawa University.

I am Professor Naoyuki HARA and was appointed Vice President International Affairs and Director of International Office from the October 1st, 2021, after my predecessor, Professor Masaaki TOKUDA completed his term at the end of September. Before I proceed, I would like to pay tribute to him for his remarkable contribution and effort in developing the collaboration we now enjoy with Chiang Mai University and National Chiayi University.



The 1st Trilateral Symposium on SDGs was held with much grandeur, more than what we had anticipated. I would like to express my sincerest gratitude for all your cooperation. I had the honor of participating in the Sustainability and Society Session, making a presentation titled “Introduction of Faculty of Economics and Tourism in Kagawa Prefecture”. I was very inspired by the many presentations and stimulating discussions among the researchers of Chiang Mai University, National Chiayi University and Kagawa University. Since then, some new joint research collaborations that transcend nationalities and disciplines have taken shape. It can be said that SDGs, especially Goal #17 “Partnership” is practiced. Base on this outcome, I feel that it is extremely important that this symposium continues in the future.

I will be responsible for the 2nd Trilateral Symposium on SDGs as it will be held at Kagawa University. We planned to hold the Second Symposium in 2022. However, the ongoing upward spike of COVID-19 infection cases all over the world as well as in Japan, drove us to re-consider the plan for the symposium. We all feel that a face-to-face event is not advisable and is difficult to be securely held and would like to postpone the symposium to the summer of 2023.

In 2023, barring COVID-19 complications, we plan to hold the symposium face-to-face. We also hope that we can make a significant contribution globally by channeling our efforts onto SDGs issues more actively from the research perspective, taking into consideration the results of 1st Trilateral Symposium. Furthermore, in order to study and work together in the future, we would like to provide opportunities for not only researchers but also to students to foster meaningful friendships and develop useful networks. To do so, we need your kind and strong cooperation.

My research theme is tourism. By all means, I would like all delegates to know and experience the attractions of sightseeing in Kagawa prefecture, such as art, nature, islands, and people.

I am looking forward to welcoming CMU and NCYU delegates in Kagawa prefecture in 2023.

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