



Self-study on Kyoto University's
Academic Activities in ASEAN
-Sustainable Fieldwork with Partners-

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Table of Contents

0. Executive Summary in Japanese	2
1. KU: Introduction and departmental activities in ASEAN	3
1.1 Self-reliant learning and self-governing departments	3
1.2 Pioneers in fieldwork and interdisciplinary approaches.....	4
1.3 Large-scale government programmes to reform and internationalise universities.....	5
1.4 How to make the programmes sustainable after the government subsidies end?.....	6
1.4.1 ASEAN University Network (AUN)-Kyoto University Student Mobility Programme towards Human Security Development.....	6
1.4.2 International Program on Resilient Society Development under Changing Climate (RSDC).....	9
1.5 Kyoto University ASEAN Center Network Committee	17
2. ASEAN Center and other top-down initiatives.....	18
2.1 Kyoto University ASEAN Center.....	18
2.2 Japan-ASEAN Science, Technology and Innovation Platform (JASTIP): Promotion of Sustainable Development Research.....	19
2.3 Nationwide and campus wide initiatives to improve academic activities.....	21
3. Future prospects	23
3.1 Prototype of a hybrid programme for fieldwork and international exchange.....	23
3.2 Student's virtual experience of other cultures	26
3.3 Future prospects and conclusion.....	28
Appendix.....	31
Overseas partner institutions in ASEAN (as of August 2020)	31
University-level student exchange partners in ASEAN (as of April 2020).....	32
List of double degree programs with ASEAN universities (as of April 2020).....	33
The number of students who joined KU double degree programs since FY2015	35

0. Executive Summary in Japanese

京都大学は自由の学風のもと、1960年代から現在まで東南アジアにてフィールドワークや対話に基づいた学術活動を牽引してきた。文部科学省の世界展開力強化事業等で、域内協定校との交流やダブルディグリープログラムは発展したものの、補助金支援期間終了後の活動に必要なリソースの確保は課題である。本報告書では、学内外の資金や大学連合・産官学連携コンソーシアムを活用して、国際プログラムを存続・発展させている具体事例を紹介し考察する。次に、ASEAN 拠点ネットワーク会議や全学海外拠点が両輪となり、複数部局が連携・情報共有して学内の国際化や共同研究を推進する例を紹介する。最後に、新型コロナウイルスの感染拡大の影響を受けた国際活動やフィールド実習を補うデジタル補助教材の可能性について触れる。指定国立大学の高度化に関し、ASEAN 拠点関係スタッフが複数部局のニーズを聞き取り試作したデジタル教材を基にした予算申請が正式に 2020～2021 年度分が認められるなど、本学は先駆的な活動を行っている。実際に現地を訪問した際の会得には及ばないものの、野外演習を模した VR 映像やオンラインでの短期留学の体験は、試用した学生から学習意欲や関心が高まったとの感想が寄せられている。関係教員からは、ASEAN 域との短期国際交流プログラムへのデジタル教材の導入や、この点での優れた支援人材の配置について期待の声が寄せられている。このように本学が強みとする「自学自習・フィールドワークに基づいた創造的な学問」の魅力を伝えるコンテンツづくりは、在学生の海外渡航への動機づけに加えて、本学に留学を検討している学生の獲得、更には協定校との友好関係の深化や本学の ASEAN 域での存在感維持にも資すると考える。

海外渡航制限の緩和後、本学が ASEAN 現地での教育・研究活動を安全に再開することを期待している。これに備えて、従来の国際プログラムの好事例の再評価を行い、オンラインを含めたハイブリッド型プログラムの試行・実践・見直しを繰り返すことで、本学の特色ある取り組みに付加価値を与え、今後の国際戦略・指定国立法人の高度化を目指す一助としたい。

1. KU: Introduction and departmental activities in ASEAN

1.1 Self-reliant learning and self-governing departments

Kyoto University (KU) was founded in 1897 as a national imperial university in the ancient capital of Japan. Its fundamental spirit is ‘students are expected to behave respectfully with their discretions, and be independent’, which permeates the entire university. With this ‘self-reliance and academic freedom’, KU evolved itself as a comprehensive, research-oriented university covering basic science, applied science, humanities, and social sciences. It now consists of 10 faculties, 18 graduate schools, and 14 research institutes¹.

Being decentralised, each department (departments include faculties, graduate schools, and research institutes) has high autonomy and self-governance. For example, it has its own entrance exam, curriculum, student-exchange programmes under the departmental-level, Memoranda of Understanding (MoUs) and overseas offices and facilities².

Another characteristic of Kyoto University is its strength and achievements in practical training at field sites. Many KU researchers have travelled to villages and engaged in a wide variety of academic disciplines such as area study, anthropology, agriculture, forestry, fishery, environmental studies, geo-informatics, and energy science. Although committed to independent learning, KU traditionally values dialogue and exploration with others. The researchers interviewed villagers, observed the experimental site, and accumulated data together with local collaborators. Their academic works derived from such empirical approaches have become creative and original.

¹ ‘Faculties, Graduate Schools, Research Institutes, and other centers’. Kyoto University <https://www.kyoto-u.ac.jp/en/about/profile/faculty/> Accessed 16 February 2021

² ‘Strategic Partnerships, General Memoranda for Academic Cooperation and Exchange’. Kyoto University <https://www.oc.kyoto-u.ac.jp/agreement/en/> Accessed 16 February 2021
Also, see p.14- ‘Facts and Figures 2020-2021’. Kyoto University https://www.kyoto-u.ac.jp/en/about/publications/kyotouniversityintroductorybrochure#facts_figures
Accessed 16 February 2021

1.2 Pioneers in fieldwork and interdisciplinary approaches

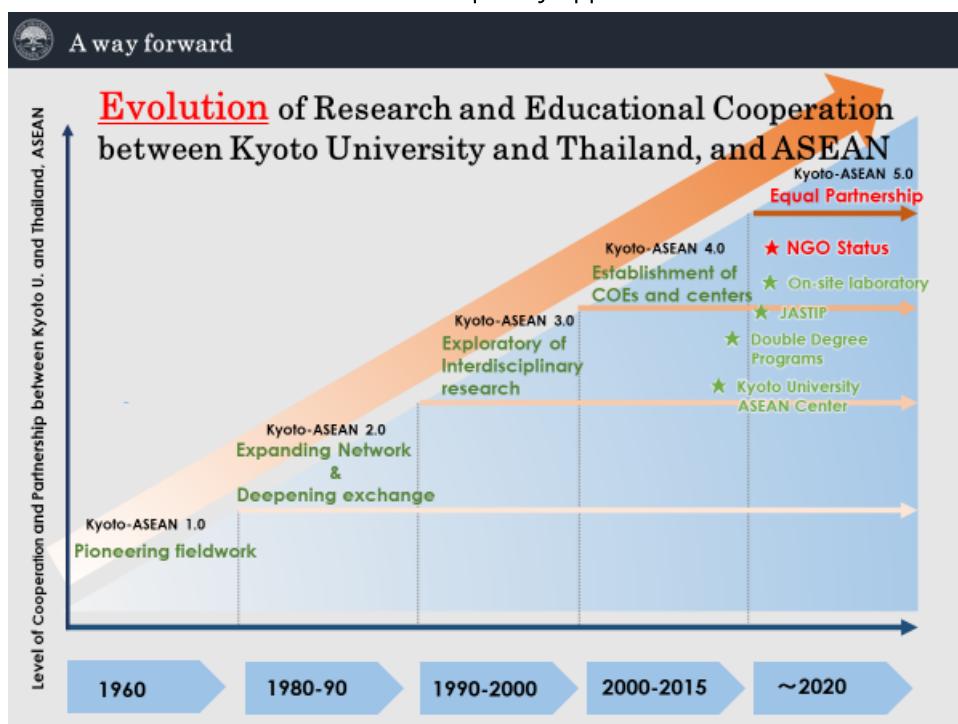


Fig 1: Evolution of Research and Educational Cooperation

Since the 1960s, Kyoto University has been a pioneer in conducting fieldwork in Southeast Asia. In 1963, it established the Center for Southeast Asian Studies (CSEAS) to conduct comprehensive and multidisciplinary research on the surrounding area, and it became the first government-regulated research centre in Japan. CSEAS established a liaison office in Bangkok in 1964 and another in Jakarta in 1970. The two offices became a base for the fieldwork and exchange of Japanese and ASEAN researchers. Furthermore, CSEAS has been inviting overseas scholars to KU since the 1960s, first under the centre's unique programme, and later under a grant from the Japan Society for the Promotion of Science (JSPS)³.

In the 1970s, the amount of funding, notably Grants-in-Aid for Scientific Research (Kakenhi) increased, and in parallel, the number of KU projects in Southeast Asia rose. This resulted in new joint research projects with local counterparts. Concurrently, from the 1970s onwards, KU accepted many foreign students from Southeast Asia under Monbukagakusho (former MEXT) scholarship. They have been continuously supporting overseas research and

³ '50 years of history at CSEAS'. CSEAS <https://history.cseas.kyoto-u.ac.jp/> Accessed 16 February 2021

international relations activities implemented by the KU⁴.

In response to rapid changes and intertwined problems on a global scale, several graduate schools were set up at KU in the 1990s; they are characterised as interdisciplinary approaches. In 1991, the Graduate School of Integrated Human and Environmental Studies was established beyond traditional divisions in academic fields, aiming to address intractable global issues⁵. For example, a holistic course was started in so-called area studies combining anthropology, ethnology, linguistics, religious studies, political science, medical science, and others. In 1998, the Graduate School of Asian and African Area Studies (ASAFAS) was started in collaboration with CSEAS and the Center for African Area Studies of KU^{6,7}. In 2002, the Graduate School of Global Environmental Studies (GSGES) followed⁸. Typical students at ASAFAS and GSGES are intensively trained to learn local languages and preliminary texts and conduct experiments in Kyoto. Subsequently, they conduct fieldwork abroad for several months to acquire first-hand professional knowledge of the target area while being equipped with a wide range of disciplines and perspectives. In this way, the students succeed in KU's self-reliant learning found upon dialogue with others from different backgrounds. Notably, KU continues to encourage such a creative combination of methodology and disciplines in order to contribute to a peaceful and harmonious coexistence across the global community⁹. This has become another important pillar of its philosophy.

1.3 Large-scale government programmes to reform and internationalise universities

In the early 2000s, the Japanese government initiated large-scale academic programmes, namely 21st Century Center of Excellence (COE) program and Global COE program, to

⁴ 'Brief History'. Kyoto University ASEAN Center <https://www.oc.kyoto-u.ac.jp/overseas-centers/asean/en/about/history/> Accessed 16 February 2021

⁵ 'Graduate School of Human and Environmental Studies'. Kyoto University <https://www.h.kyoto-u.ac.jp/en/gr/> Accessed 16 February 2021

⁶ 'Mission'. ASAFAS <https://www.asafas.kyoto-u.ac.jp/en/mission/> Accessed 16 February 2021

⁷ 'History of ASAFAS'. ASAFAS <https://www.asafas.kyoto-u.ac.jp/en/history/> Accessed 16 February 2021

⁸ 'Features'. GSGES <https://www2.ges.kyoto-u.ac.jp/en/introduction/features/> Accessed 16 February 2021

⁹ 'Kihon Rinen'. Kyoto University <https://www.kyoto-u.ac.jp/ja/about/operation/ideals/basic> Accessed 16 February 2021

reform universities. Under the government support, many projects have created tangible academic results and mutual exchange of students, managed by various KU departments such as CSEAS, Graduate School of Energy Science, Institute of Advanced Energy, Research Institute for Sustainable Humanosphere, Graduate School of Science and Disaster Prevention Research Institute.

This led to international programmes based on MoUs with Southeast Asian partners (e.g. short-term student exchange and double degree programmes). Under the agreement of the faculty members, both from affiliated and host universities, participants are awarded certificates, credits, or degrees on completion. More details on representative programmes will be discussed in the following chapters.

1.4 How to make the programmes sustainable after the government subsidies end?

MEXT’s Inter-University Exchange Project (IUEP) or Sekai Tenkairyoku provides financial support for quality partnership programmes with overseas universities in designated countries and areas for five years. This encourages Japanese students to study abroad as well as foreign students to study in Japan. This chapter first introduces KU’s two pilot IUEP-ASEAN programmes and subsequently focuses on their sustainable development after government subsidies ended.

1.4.1 ASEAN University Network (AUN)-Kyoto University Student Mobility Programme towards Human Security Development

In FY2012, a pioneering multidisciplinary proposal ‘ASEAN University Network (AUN)-Kyoto University Student Mobility Program towards Human Security Development’ was launched under IUEP-ASEAN. Under an agreement for comprehensive academic exchange with AUN, six KU departments joined together on issues such as global warming and disaster prevention. KU offered joint courses on the environment, energy, food and water resources, and public health, which would be mutually credited after completion by the students. KU and partner universities in ASEAN exchanged students over summer schools and recruited them for partnership and double-degree programmes.

	FY2012		FY2013		FY2014		FY2015		FY2016		Total	
	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In
Plan	15	15	30	30	46	57	54	65	59	65	204	232
Actual	30	0	18	49	31	43	36	47	29	50	144	189

Table 1: Number of exchange students under IUEP

The total number of outbound students reached 144 and inbound to 189 over five years from FY2012 to FY2016¹⁰.

Notably, KU concluded agreements for double-degree programmes with Universitas Gadjah Mada and Institut Teknologi Bandung (Indonesia), University of Malaya (Malaysia), Chulalongkorn University and Kasetsart University (Thailand)¹¹.

FY2013-FY2016	Out (from KU)	In (from ASEAN)
Joined DD	9	20
Completed DD	4	5

Table 2: Number of students who joined and/or completed double degree programmes under AUN-Kyoto University Student Mobility Programme towards Human Security Development

Although the number of students who completed the double degree programme was small at that time, KU developed more such projects. (For more details, please refer to the appendix: the number of students who joined KU's double-degree programmes since FY2015). This Human Security Development programme was evaluated as 'S' at the mid-term and final evaluations of the IUEP committee.

Every year since FY2013, the Graduate School of Energy Science has been accepting 12 to 28 undergraduate students annually from AUN member universities for winter school in Kyoto. To maintain student mobility after the financial support from the government, AUN and Graduate School of Energy Science at KU have organised 'Winter Seminar on Human Security Development and Energy Science' targeted at undergraduate students from all academic fields since 2016¹².

¹⁰ 'Torikumi Jisseki no Gaiyo'. JSPS https://www.jsps.go.jp/j-tenkairyoku/data/shinsa/h24/h24_jiseki_104.pdf Accessed 16 February 2021

¹¹ 'FY2021 Re-Inventing Japan Project Kyoto University'. JSPS https://www.jsps.go.jp/j-tenkairyoku/data/shinsa/h24/torikumi_gaiyo/h24_104_outline_E.pdf Accessed 16 February 2021

¹² 'Winter Seminar' Graduate School of Energy Science <http://www.energy.kyoto-u.ac.jp/en/winter-seminar/> Accessed 16 February 2021

2016	2017	2018	2019	2020
28	25	18	18	25

Table 3: Number of students from ASEAN who joined the winter seminar

The seminar aims to deepen students' knowledge of human security development and energy science with the prospect of finding solutions to technological, socio-economic, and political issues. To receive students' attention, **a liaison officer for KU at the AUN office promotes the winter seminar among its member universities, and the candidates are subsequently screened.** Selected students from ASEAN have to bear a nominal participation fee (JPY10,000 to cover field studies and other expenses) and the cost of transport and food (round-trip flight, domestic travel expenses, visa application fee, travel insurance and meals) on their own, but their accommodation would be covered by KU, and tuition fees waived. Approximately 15 selected students are entitled to a scholarship from the Japan Student Services Organization (JASSO) of about JPY80,000 each. Few self-funded participants covered all the necessary costs on their own, even though they failed in the JASSO scholarship selection.

During the 12-day program, the participants from AUN member universities attended introductory seminars and discussions and then went to cultural events and field study trips to a mega solar, wind farm, and fuelling facility from waste oil. The participants engaged in group work for the final presentation. Once the students complete all the requirements, they are provided a certificate issued by KU's Graduate School of Energy Science. Moreover, they earn equivalent credits at their home university with approval.

Call for Applicants

京都大学
KYOTO UNIVERSITY
GRADUATE SCHOOL OF ENERGY SCIENCE
ASEAN
University
Network

Winter Seminar on HSD and Energy Science

This seminar is designed for undergraduate students to study the concept of Human Security Development (HSD) and Energy Science. The main theme of this seminar is energy development, which is an important issue in Human Security Development. The participating students are expected to deepen their knowledge on human security development and energy science with the prospect of finding solutions to technological, socio-economic and political issues in Asia specifically. The seminar will offer lectures and class discussions as well as organize field trips and cultural events. Applicants are not limited to engineering, economics, or science – all fields are welcome.

Tentative Program: (13 – 25 January, 2020) Place: Kyoto University, Kyoto Japan

Date	Schedule (tentative)	Date	Schedule (tentative)
13 (Mon)	◆Arrival in Japan	20 (Mon)	◆Energy Efficiency ◆Technologies for Reducing CO ₂ Emissions
14 (Tue)	◆Guidance, introduction of Kyoto University ◆Solar Energy	21 (Tue)	◆Energy and Sustainability Workshop
15 (Wed)	◆Energy Storage ◆Wind Turbine	22 (Wed)	◆Biomass energy ◆Debate
16 (Thu)	◆Energy Grid or Linc. Hydrogen, Superconductivity ◆Hydrogen Energy	23 (Thu)	◆Global Energy Situation ◆Group work for their presentation
17 (Fri)	◆Field study trip	24 (Fri)	◆Group work for finalizing their presentation ◆Group presentation, Wrap up discussion
18 (Sat)	◆Field study trip	25 (Sat)	◆Leave Japan
19 (Sun)	◆Cultural tour		

Application

- All participants are required to pay a JPY10,000 participation fee, which includes field studies, and other necessary expenses during the seminar. Note: Participants must pay travel expenses by themselves – further details in the application guide.
- Target students: Undergraduate level
- The number to be admitted: 25 students in total from overseas universities.
- For further information, please refer to the application guidelines.

Contact

- Website: <http://www.energy.kyoto-u.ac.jp/er/winter-seminar/>
- E-mail: energykyoumu@mail2.adm.kyoto-u.ac.jp

Fig 2: Poster of Winter Seminar on HSD and Energy Science

The winter seminar has been favourably reviewed by both ASEAN and KU. The AUN officer stated that the programme was popular among ASEAN member institutions (for example,

once the applicants reached 150), and the positive reviews on its quality and the number of students is listed in the AUN annual reviews¹³. At KU, a faculty member agreed that the students were motivated and expected more participants after the short course to pursue full-time graduate courses at the university.

1.4.2 International Program on Resilient Society Development under Changing Climate (RSDC)

KU's Department of Engineering has led several projects in ASEAN. Based on the foundation built by a previous project titled 'Consortium for International Human Resource Development for Disaster-Resilient Countries', the succeeding project, 'International Program on Resilient Society Development under Changing Climate (RSDC)' was adopted under IUPEP in FY2016¹⁴. Its aim is to train 'infrastructure human resources' to lead resilient social development against climate change, and the target issues include heavy rains, water shortage, rising sea levels, deforestation, environmental pollution, and landslides.

The programme is conducted through cooperation among KU, Kansai University in Osaka, and alliance universities in Cambodia, Indonesia, Laos, Myanmar, Thailand, and Vietnam. **Each collaborating university recruits targeted students from undergraduates to master's and doctoral degree courses on their own.** To meet different levels of the participants, it carefully designed an integrated English-language education plan as follows¹⁵:

¹³ 'ASEAN University Network Annual Report 2018-2019 2nd Edition'. AUN <http://www.aunsec.org/pdf-2019/AUN%20Annual%20Report%202019%20Revise%20Final1.pdf> Accessed 16 February 2021 (p.135-7)

¹⁴ 'Outline'. International Program on Resilient Society Development under Changing Climate <http://www.drc.t.kyoto-u.ac.jp/rsdc/eng/outline/index.html> Accessed 16 February 2021.

¹⁵ 'Program'. International Program on Resilient Society Development under Changing Climate <http://www.drc.t.kyoto-u.ac.jp/rsdc/eng/program/index.html> Accessed 16 February 2021.

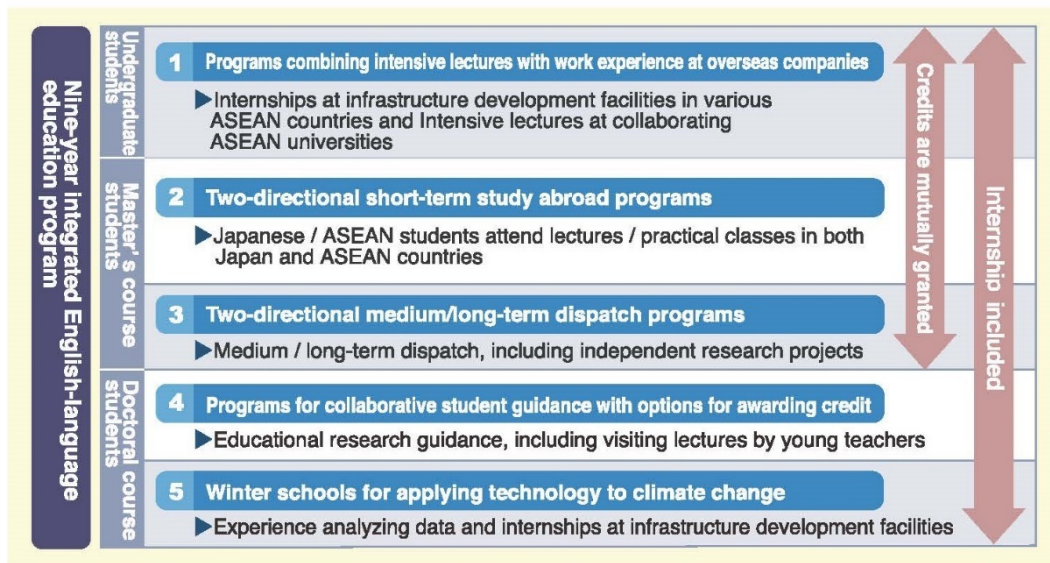


Fig 3: Contents of Education Programme Plans

As Fig. 3 illustrates, undergraduate students would participate in intensive lectures and internship work experience with ASEAN partners, while master’s students would join bidirectional short/medium/long-term study abroad programmes in both Japan and ASEAN countries, including independent research ones. Doctoral students would join those for collaborative guidance and winter schools to apply technology to climate change. By doing so, this RSDC programme aims to ensure that the participating students are aware of the following:

- 1) the global society and their own position, thereby providing them a sense of purpose
- 2) being international human resources who must work hard and act to develop infrastructure and form healthier environments around the world, and
- 3) being professional leaders.

This ideal vision resonates with KU’s philosophy of being independent and contributing to harmonious coexistence across the global community.

The important component of the RSDC program is an international internship at companies where students affiliated with Japanese universities are placed overseas, while international students are based in Japan. For instance, the host supervisor or company staff took the students to construction sites and invited them to test soil and water samples for quality control. KU has many graduates in the companies and through this alumni network, this cooperation of hosting students as a short-term intern becomes possible.

During the 2-week summer intensive programme in 2019, 43 students from 11 countries gathered in Kyoto. In addition to classroom lectures and group work, they visited NEWJEC Inc. and learned Japan's flood control measures from engineers working on global projects. This was followed by a visit to an ongoing construction site of the Amagase Dam Redevelopment Project, with the cooperation of the Kinki Regional Development Bureau, Lake Biwa Office of the Ministry of Land, Infrastructure, Transport, and Tourism. This enabled the students to know how to extend the discharge tunnel and improve the efficient use of the reservoir¹⁶.



One-day Internship at Newjec Inc.



Field Trip to Amagase Dam, August 9, 2019

The participants were positive regarding the RSDC programme: one picture is worth a thousand words! Many commented that the field trips envisioned concrete and practical applications of the theories learnt in classes and in textbooks. They learnt how international projects were conducted with multinational engineers under strict safety and logistic measures. They also realised the importance of communication and soft skills in solving problems in a group from diverse backgrounds¹⁷. The participants were enlightened by such professionalism and were equipped with both technical and interpersonal skills to work on a

¹⁶ 'RSDC Newsletter 2019 December Vol. 5'. http://www.drc.t.kyoto-u.ac.jp/rsdc/publication/drc_pdf/NL_05.pdf Accessed 16 February 2021

¹⁷ 'Newsletter'. International Program on Resilient Society Development under Changing Climate <http://www.drc.t.kyoto-u.ac.jp/rsdc/eng/publication/index.html> Accessed 16 February 2021

global scale.

	FY2016		FY2017		FY2018		FY2019		FY2020		Total	
	Out	In	Out	In	Out	In	Out	In	Out	In	Out	In
Plan	0	0	21	19	21	26	21	19	21	19	84	83
Actual	0	0	25	30	32	29			-	-	-	-

Table 4: Number of exchange students under IUEP

The actual number of exchange students, both inbound and outbound, under the RSDC programme exceeded the target number of students, and it received ‘S’ at the mid-term evaluation. This was the only ‘S’ evaluation among the eight adopted projects¹⁸:

The evaluation report noted that while RSDC’s options for short-term, internship, mid-term, or long-term programmes had been praised for being attractive, it is expected that they would improve further by utilising the Kyoto University ASEAN Center (See Chapter 2.1), so that it would achieve its objective to nurture researchers and engineers with a global perspective.

IUEP committee noted that foreign students who joined the international programmes led by MEXT and other ministries did not get actively involved with the Japanese industry. Considering the experience of accepting foreign students under governmental initiatives, the Eight-University Engineering Association in Japan¹⁹ jointly raised the problem that after completing these government programmes, only about half of the foreign applicants in science, technology, and engineering are able to work in a Japanese company for the middle -or long-term. According to the Association’s joint statement issued in April 2017:

Due to the declining birth rate and growing proportion of elderly, the Japanese working/industry population is declining. If Japan plans to rely on scientific and technological development to grow its society and economy in the long run, it is ultimately important to secure and nurture talented foreigners in science and engineering fields. To facilitate their integration, a new mode of international exchange programme is worth considering in

¹⁸ ‘Chukan hyoka kekka’. JSPS https://www.jsps.go.jp/j-tenkairyoku/data/h28/h28_chukan_kekka_b-5.pdf Accessed 16 February 2021

¹⁹ Member of the Association are Hokkaido University, Tohoku University, The University of Tokyo, Tokyo Institute of Technology, Nagoya University, Kyoto University, Osaka University, and Kyushu University.

cooperation with the industrial sector²⁰.

In line with the joint-proposal, the KU department of engineering and ASEAN Center are now forming an 'Industry-Government Academic Collaborative Consortium on International Internship' with Public Association for Construction Services in Kinki Region (CSKR), Kinki Regional Development Bureau of Ministry of Land, Infrastructure, Transport and Tourism, Kansai Geological Survey Association, Kinki Branch of Japan Civil Engineering Consultants Association, Kansai Branch Office of Japan Construction Machinery and Construction Association, and member companies of the associations. KU and the related bodies have been holding monthly meetings since spring 2020 and officially launched the consortium.

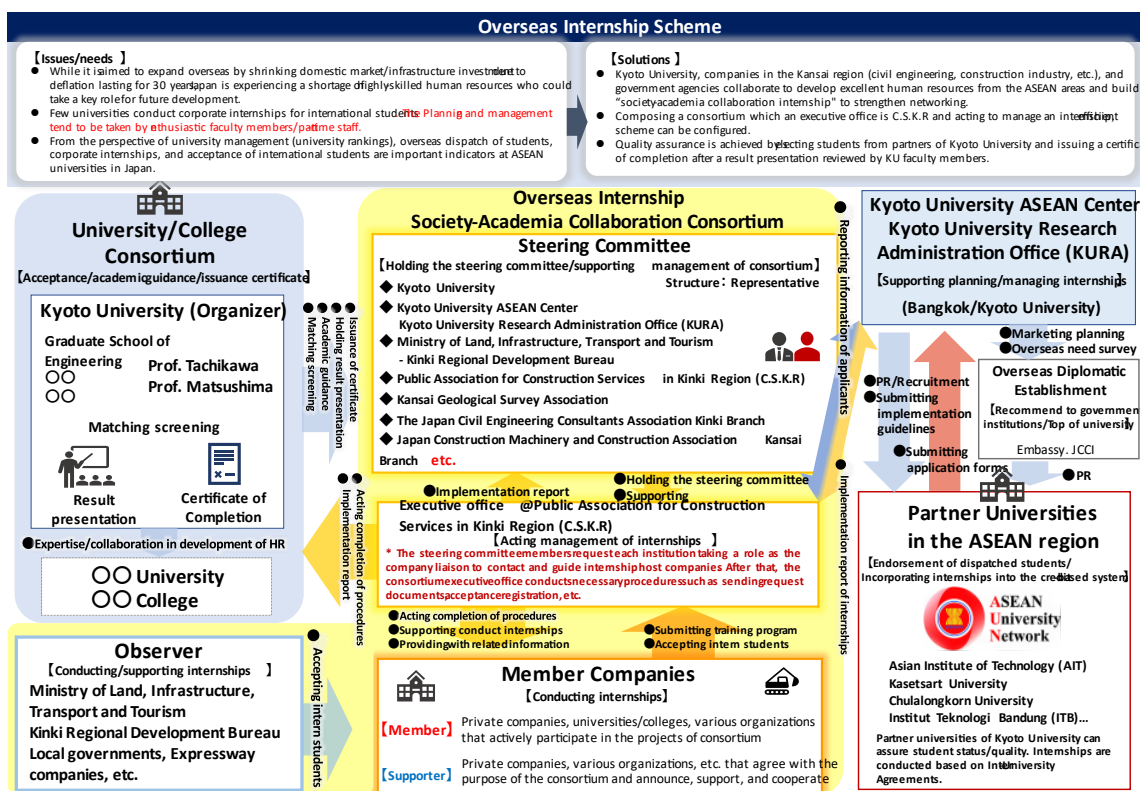


Table 5: Project Plan

The consortium is planning an inbound short-term internship programme for graduate students affiliated with KU's partner universities in ASEAN, the majority of which are collaborative partners from the AUN and RSDC programmes. **The partner institutions would**

²⁰ 'Waga kuni no hatten wo sasaeru yushu na ryugakusei jinzai no ikusei to teichaku'. Eight-University Engineering Association https://8uea.org/pdf/201705_0001.pdf Accessed 16 February 2021

promote the programme internally and prospective applicants would apply for the KU/consortium secretariat. The committee of the consortium screens the applicants and carefully matches their interests with the member companies in Japan. During the 2-week programme, the participants would first attend intensive classes at KU and then they go for internship individually at private companies associated with the bodies.

Internship Tentative Program Schedule							
[Duration] 14 days (From visiting Japan to returning including transfer days)							
[Schedule]							
Arrival in Japan → Orientation/Lectures by Kyoto University → Internship & on- the-job visiting → Result presentation /commencement → Returning (3 days) (Approx.1 week + weekends) (1 day)							
[Number of participants] 2-3 ppl/1 company * 1 out of the students must be M1, Graduate School of Engineering, Kyoto University							
[Eligible student] Belong to a partner university of Kyoto University in the ASEAN region / special auditing student (Utilizing the system "Special Research Student")							
[Expected results] <u>Building a connection with excellent human resources</u> <u>Networking with universities/companies in the ASEAN region</u> <u>Development of society-academia collaboration research</u> <u>Promotion of company recruitment/securing highly -skilled human resources</u>							
形態	Case 1	Case 2		Case 3		Case 4	
Responsible organization	Kyoto University A company	Kyoto University A company Kinki Regional Development Bureau		Kyoto University 2 companies Observer Organization		Kyoto University/2companies Kinki Regional Development Bureau Observer Organization	
3 days	Kyoto University Orientation Carry out necessary procedures	Kyoto University Orientation Carry out necessary procedures		Kyoto University Orientation Carry out necessary procedures		Kyoto University Orientation Carry out necessary procedures	
	Lecture at Kyoto University	Lecture at Kyoto University		Lecture at Kyoto University		Lecture at Kyoto University	
1 week + Weekends	General Contractor (1 week)	General Contractor (5 days)	Construction Consultant (5 days)	General Contractor (3 days)	Construction Consultant (3 days)	General Contractor (3 days)	Construction Consultant (3 days)
		Visit Kinki Regional Development Bureau (2 days) Amagase Dam etc. Infrastructure DX Promotion Center		General Contractor (2 days)	Construction Consultant (2 days)	General Contractor (2 days)	Construction Consultant (2 days)
		Visit Kinki Regional Development Bureau (1 day) Amagase Dam etc./ Infrastructure DX Promotion Center		Visit Observer (2 days) Expressway Komatsu, Ltd. Hitachi, Ltd. etc.		Visit Observer (1 day) Expressway /Komatsu · Hitachi, etc.	

Table 6: Sample schedule of the internship programme under planning

One of the keys for successful operation of the consortium appears to be convincing prospective member companies that internship students abroad would be beneficial for their business.

- 1) R&D talent: Having admitted to an excellent partner university of KU, the academic skills and technical knowledge of the participating students are assured to be of top-level in ASEAN. They have the potential to be highly skilled R&D staff in the engineering industry.
- 2) Bridge between Japan and ASEAN: Having clarified the objective to attend an international programme with KU and Japanese companies on the application forms, the participants become aware of their future role in bridging both countries and willing to adapt to the different cultures abroad. Through the internship at companies in Japan, the students would get familiarised with local business customs. They could subsequently emerge as a pro-

Japanese interface and contact person in conducting an international project between Japan and ASEAN countries. The Japan Association for Promotion of Internationalization (JAPI) also observes that being conscious of the strength of Japanese business, foreign interns can effectively promote those features overseas and develop new customers and markets. Furthermore, according to the Japan Internship Project led by the Ministry of Economics, Trade and Industry (METI), Japan, some foreign interns have a strong connection with researchers and government offices in the originating countries and introduce their network to the Japanese company.

3) Cooperative image and internationalisation: The METI project suggests that by having a foreign intern, the company can promote itself to contribute to diversity management and globalisation. Subsequently, it is required to improve job training to nurture young talent from various backgrounds. The business environment in Japan would gradually adapt to a global standard, which will have a positive influence on the awareness of Japanese staff as well. The impact on internationalisation within the country appears to be the most influential factor²¹. Members of the Japan Civil Engineering Consultants Association commented that if a company collaborated with Kyoto University, it would improve the cooperative image and branding as well.

Feedback from the companies reveals that they need to bear an initial investment in accepting foreign interns for short-term or hiring foreign engineers if they recruit them on their own. They say that former internship programmes often required time and effort from a limited staff to explain logistics and basic information in English. **The burden of the staff would be reduced if a central administrative platform could listen to each company's expectations of the candidates (e.g. academic background and English/Japanese fluency) and lead to an overall internship execution, including careful matching and logistic arrangement.** If KU's consortium with CSKR works as a central administration office, the consortium member companies could focus more on the actual interaction with the students.

This KU consortium programme would possibly enable companies to build closer personal relationships and networks with top-level graduate students from ASEAN with a strong motivation to bridge both countries as well as sufficient technical knowledge and familiarity with Japanese working culture. In the short term, the practice of accepting foreign interns would improve quality training and management systems of the participating companies.

²¹ 'Japan Internship Program'. Ministry of Economy, Trade and Industry
<https://internshipprogram.go.jp/report/> Accessed on 17 February 2021

Foreign personnel also proved to have a positive influence on Japanese staff's attitude towards driving internationalisation. In the long run, companies would secure a sufficient number of highly skilled R&D staff from both Japan and abroad, and their collaboration expands their business further in the target countries.

With this vision, while emphasising the possible benefits to companies, the KU department will apply for financial support from organisations such as JASSO or other private foundations to cover up the modest expense on administrative costs. The consortium collects minimal membership fees from the participating companies. Indeed, other KU departments received requests from a company to receive donations to conduct an internship program. Once this pilot consortium scheme proves to work well, it is possible to expand to different academic fields and related companies.

While governmental initiatives on university internationalisation have certainly served as an incentive to meet the target number of researchers and students participating in the mobility programmes, it is still challenging to ensure their quality and quantity, once the subsidies end or coordinating professors retire. Learning from the previous examples of international programmes, KU has been working on securing other resources to continue exemplary activities. How can the programs be made more sustainable? **It seems imperative to secure alternative external financing (other than the IUEP's subsidies) and shared administrative platforms to continue, especially after the government subsidies end.** Both the 'AUN Winter Seminar on Human Security Development and Energy Science' and 'RSDC' utilise both external and internal funding. The leading departments apply for financial support from JASSO to cover part of the expense and selected students can receive approximately 80,000 yen. As for internal funding for collaborative programmes, Kyoto University offers support departments under the Wild & Wise Collaborative Learning Programs²², which partly covers the operational cost of the 'AUN Winter Seminar' and 'RSDC' programmes²³.

Additionally, forming a consortium as an administrative platform appears to be effective for

²² 'Wild & Wise Collaborative Learning Programs. Kyoto University https://www.kyoto-u.ac.jp/en/education-campus/education_and_admissions/non-degree-programs/international-education-initiatives/wild_and_wise Accessed 16 February 2021

²³ 'News'. Kyoto University http://www.kyoto-u.ac.jp/ja/international/events_news/department/kougaku/news/2019/190813_1.html Accessed 16 February 2021

the sustainable development of an international exchange programme as well. As we have seen in 1.4.1, ASEAN University Network (AUN)-Kyoto University Student Mobility Program towards Human Security Development, collaboration with AUN officers reduces the administrative burden on KU, from promotion of the seminar among member universities to shortlisting candidates. Furthermore, the inter-sectoral collaboration in engineering fields to succeed in the RSDC programme has the potential to serve as a central administrative office. This can effectively match the demands in Japan and ASEAN and acquire fees from member companies for the basic operation of the international internship programme.

1.5 Kyoto University ASEAN Center Network Committee

Even though KU departments have high autonomy and academic liberty in conducting their educational and research activities in the ASEAN region, inter-departmental collaboration over IUEP projects has brought the relevant departments closer. The KU ASEAN Network Committee has been established to facilitate collaboration and information sharing among departments. As of now, it consists of representatives from 24 departments, and they engage in friendly discussions on a wide agenda ranging from updates of KU partner universities in the ASEAN region, to risk management, notice of international events and grants, at the bimonthly committee meetings²⁴.

One of the common interests is how to improve educational programmes between KU and ASEAN partner institutions. In the spring of 2019, a working group was formed to discuss lessons learned from the previous programmes and to identify challenges to be tackled together.

It sometimes adds an additional burden on the faculty members to receive international students over the inbound programme, as their administrative office could not necessarily spare enough human resources exclusively for it. After departmental requests, the KU ASEAN Center (see Chapter 2.1) would ideally assist in short-term student exchange. The number of outbound students from KU to partner institutions for mid to long term was pointed out by the auditors as too small (for the number of students from abroad and those going abroad, please see p.18-20 of the appendix²⁵). The remaining issues raised by the working group need

²⁴ 'Organization'. Kyoto University ASEAN Center <https://www.oc.kyoto-u.ac.jp/overseas-centers/asean/en/about/organization/> Accessed 16 February 2021

²⁵ 'Facts and Figures 2020-2021'. Kyoto University <https://www.kyoto->

to be considered. What kind of support is most necessary from the headquarters and related staff at KU? The next chapter introduces some top-down initiatives for internationalisation.

2. ASEAN Center and other top-down initiatives

This chapter briefly introduces KU's institutional initiatives to promote international activities in ASEAN, an overseas centre in Bangkok, a multilateral project called JASTIP, and onsite laboratories. While pushing forward a strong academic field led by each department, KU is trying to expand collaboration in wider fields of research and region.

2.1 Kyoto University ASEAN Center

In parallel with the ASEAN Center Network Committee, which aimed to support international academic activities, the KU ASEAN Center was opened in Bangkok in June 2014. It is managed by resident KU staff comprising the director (Professor Emeritus), university research administrators (URA), administrative and local staff, in close cooperation with KU international divisions. The center has four main missions.

1. Supporting research activities in the ASEAN region
2. Supporting educational activities in the region
3. Promoting internationalisation: students, faculty, and staff
4. Strengthening KU's global network

Among these, missions 3 and 4 are unique to the KU. According to the analysis by Tomita and Shibayama, the number of overseas offices in Thailand run by Japanese universities reached about 50 by 2017, and most of them primarily focused on recruiting international students from the ASEAN region (Shibayama 2017)²⁶. In a typical case, local staff is stationed at a Bangkok partner university, and a Japanese representative comes on a business trip to attract prospective students during educational fairs. Compared to the operations of most Japanese universities, KU permanently posts Japanese staff, including an early-career-administrator on site, who works for a couple of months to a year as an overseas intern (mission 3). S/he engages with various types of job training: giving a presentation and consultation at educational fairs, helping out KU department entrance examinations and

u.ac.jp/sites/default/files/embed/jaaboutpublicissueku_eprofiledocuments2020facts_and_figures2020_2021.pdf Accessed 16 February 2021

²⁶ 'Nihon no yaku 50 daigaku ga tai ni shinshutsu'. Mamoru Shibayama. Banya Nihon Shoko Kaigisho Shoho July 2017

short-term educational programmes conducted in ASEAN, in addition to running an independent rented office as an accountant. From 2014 to 2020, 14 administrators have worked on-site. After returning to Japan, they drive KU's internal internationalisation. Furthermore, the ASEAN Center is expected to enhance alumni associations overseas (mission 4). After graduation, many international and Japanese alumni have been promoted in the academic, industry, and governmental sectors in the ASEAN region. They play a major role in extending collaboration and networking between KU and its partners, so it regularly organises events such as the Southeast Asia Network Forum with alumni associations to bridge ties and update recent activities in Kyoto. Collaboration between alumni associations is in progress.

2.2 Japan-ASEAN Science, Technology and Innovation Platform (JASTIP): Promotion of Sustainable Development Research

The ASEAN Center staff initiated a large-scale, multi-lateral international project. At the ASEAN Center Network Committee meeting (Chapter 1.5), it was proposed that KU compile a joint proposal under the framework of the Collaboration Hubs for International Research Program (CHIRP), funded by the Strategic International Collaborative Research Program (SICORP) of the Japan Science and Technology Agency (JST). Representatives from several KU departments responded to the idea and sought a project plan consisting of work packages (WP) from 'Energy and Environment', 'Bioresources and Biodiversity', to 'Disaster Prevention'. The proposal was officially adopted by JST, and in FY2015, KU kicked off this 5-year multilateral programme named Japan-ASEAN Science, Technology and Innovation Platform (JASTIP): Promotion of Sustainable Development Research.

JASTIP serves as a platform based on the partnership and networking of headquarters and three joint laboratories in Thailand, Indonesia, and Malaysia.

WP1: WP1 functions as the hub for promoting collaboration and events between satellite sites. It also organises the societal implementation of research activities as well as dialogue between policy makers and the private and public sectors in 10 ASEAN member states.

WP2: WP2 'Energy and Environment' established a satellite at the National Science and Technology Development Agency (NSTDA) in Thailand. Succeeding a previous project under the Science and Technology Research Partnership for Sustainable Development (SATREPS) programme on the 'effective use of low-grade coal or biomass based on the solvent reforming method', WP2 works on joint research on renewable energy and dissemination of the systems to wider ASEAN communities.

WP3: WP3 'Bioresources and Biodiversity' has a satellite at the Indonesian Institute of

Sciences (LIPI), aimed at utilising tropical biological resources within ASEAN countries. WP3 and WP2 members jointly develop advanced biomass methods for the conversion of plants to fuel or functional materials with partners in Indonesia, Lao PDR, and Thailand. WP4: WP4 has satellite stands at the Malaysia-Japan International Institute of Technology (MJIIT) in Kuala Lumpur to promote research on disaster prevention. In addition to Malaysia, WP4 members conduct joint research with Vietnam, Thailand, Indonesia, and the Philippines, on a variety of disaster issues related to heavy rains, flooding, and landslides. Common issues are the development of early warning systems to reduce risk and ultimately to implement the systems. In parallel, WP4 contributes to curriculum development for postgraduates on disaster prevention at MJIIT.

As such, Japan's scope in research in the region has become far larger than previous international projects. The ASEAN Committee on Science, Technology, and Innovation (ASEAN COSTI) has officially approved JASTIP and expects more dissemination of the research outcomes in societal implementation across all ASEAN member states. To meet these demands, by circulating a call for proposals via COSTI's channel, JASTIP could recruit new ideas from stakeholders that KU had never reached before (JASTIP-net). As the network widened, Japanese project members frequently visited field sites, for example, in Myanmar and Cambodia to expand rural electrification and Brunei and Singapore to explore collaboration in biodiversity. Here, the members from both Japan and ASEAN observed the site together and then discussed face-to-face how to solve priority issues.

The evaluation of the first phase of JASIP was announced in February 2020 as 'A' (better than satisfactory). Many academic papers have been published and symposia held. The results of academic research have been widely disseminated. Social issues were also identified and addressed to solve common problems with team effort. JASTIP involved the private sector to some extent, but not sufficient.

Based on this evaluation, JASTIP was officially approved for the second phase from September 2020 to March 2025. The objectives remain more or less the same as those of the first one, promoting joint research to achieve Sustainable Development Goals (SDGs), establishing an inclusive ST platform of Japan-ASEAN, and capacity building for the next-generation of researchers and coordinators. However, the expected budget of the second phase is greatly reduced. During the first phase, the annual budget was about 90 million yen, including indirect overhead costs. During the second phase, KU will receive only about 30 to 50 million yen per year. This would be allocated to JATIP-net projects and the seven KU

departments involved. Therefore, JASTIP members both in Japan and ASEAN have been discussing the priority areas to invest the limited budget on and explore to raise additional resources and funds. From the first phase, many professors used other research grants and internal subsidies to advance JASTIP. To facilitate matching projects and funds with ASEAN partners, Kyoto University Research Administration Office has been organising monthly online seminars with ‘Science, Technology and Innovation (STI) coordinators’ with counterparts in ASEAN, with the cooperation of JASTIP, ASEAN Foundation and ASEAN COSTI since August 2020.

2.3 Nationwide and campus wide initiatives to improve academic activities

MEXT established the ‘Designated National University (DNU) cooperation system’ in 2017, with the aim of significantly improving education and research levels of Japanese universities and facilitating their creation of innovation. The selected universities can apply special provisions to become globally competitive among top universities in the world²⁷. KU was designated as one of the DNUs in 2017, and regarding internationalisation, the ASEAN region has been specified as the priority area. KU is expected to further contribute to sustainable development by enhancing Japan-ASEAN cooperation, and JASTIP is an exemplary project²⁸.

Other concrete and new measures were also taken. KU has set up locally managed laboratories called ‘on-site laboratories’ in cooperation with overseas partner institutions. This is to promote exchanges in education, industry-academia collaboration, and student, staff, and faculty development built on the foundation of robust research collaboration²⁹.

Since 2018, two on-site laboratories have been in operation in Thailand. The first, Kyoto University On-Site Laboratory at Mahidol University for Educational and Research

²⁷ ‘Designated National University Cooperation’. MEXT https://www.mext.go.jp/en/policy/education/highered/title02/detail02/_icsFiles/afieldfile/2020/20200408-mxt_kouhou02_02.pdf Accessed 17 February 2021

²⁸ ‘Overview of KU’s Proposal for Designated National University corporation Status’. Kyoto University <https://www.kyoto-u.ac.jp/sites/default/files/embed/enaboutoperationdesignateddocuments01.pdf> Accessed 17 February 2021

²⁹ ‘On-site Laboratories’ Kyoto University <https://www.kyoto-u.ac.jp/en/about/operation/designated/on-site-laboratories> Accessed 17 February 2021

Collaboration in Environmental Studies, is located in Bangkok. At Mahidol, the common lab space and equipment are being equipped for operation to test sample water, air, and food ‘on site’. Back in 2007, KU’s Graduate School of Global Environmental Studies concluded a departmental relationship with the Faculty of Engineering at Mahidol University and worked on organic fluorine compound (perfluorinated compounds - PFCs) treatment techniques and its mitigation. Since then, many students have participated in internships in both countries. This expanded to a further agreement to cross-appoint faculty members in 2015 and to establish a double degree programme in environmental studies between the two universities in 2016. In addition, the on-site laboratory at Mahidol University aims to expand current collaboration horizontally (to other departments, such as engineering, agriculture, and public health) and vertically (from undergraduate to doctoral course). Mahidol University and KU have been negotiating to establish another double-degree course. The aforementioned cross-appointed faculty is a KU alumni, and she diligently coordinates multi-layered collaboration between the two universities.

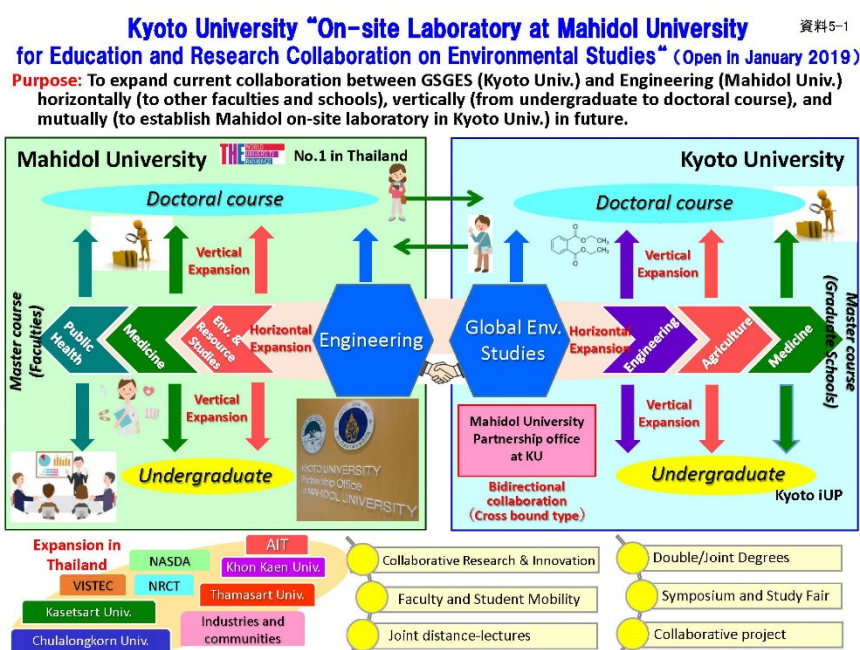


Table 7: Kyoto University ‘On-site Laboratory at Mahidol University’

Another on-site laboratory was established in Rayong, Thailand, managed by KU’s Institute for Integrated Cell-Material Sciences (iCeMS) with a local partner, Vidyasirimedhi Institute of Science and Technology (VISTEC). This laboratory conducts world-leading research in material science, cultivating young talent, and expanding collaboration with industrial partners. After obtaining a PhD from the iCeMS lab in Kyoto, some early career researchers

play an active role in chemistry and material science collaboration between VISTEC and KU. In terms of collaboration with industrial partners, VISTEC has a strong advantage from the beginning, as it was established in 2015 with the support of PTT Public Company Limited (a Thai state-owned oil and gas company).

Both of KU's on-site laboratories in Thailand have a strong research field as the core and plan to expand the collaboration to different academic fields and sectors. The departments still need to adapt to local and international regulations to conduct research on-site, yet the collaboration would flourish based on the accumulated trust and dialogue between KU researchers and alumni.

3. Future prospects

Due to the COVID-19 pandemic, many countries have imposed movement control. This affected the modes of academic exchange within KU. It became almost impossible to send members abroad or to receive international academics and students from foreign partner institutions for the short term in Japan. Since the end of February 2020, most international events have been postponed or downsized. As for the joint symposium of KU and partner universities, presentations were held online, while the organisers had to give up visiting laboratories, field sites, and regional campuses, as well as hosting welcome dinners. This presents a challenge to KU's tradition of fieldwork outside, based on direct observation.

At KU, the spring semester in 2020 started later than usual, based on online classes. Teachers were quickly forced to adapt to the new normal on campus and prepare usual classes, while many students complained about sitting in front of a computer all day. In short, there is an atmosphere of weariness among KU members. Under such circumstances the question arises, how to encourage them to participate in 'mobility' programmes?

3.1 Prototype of a hybrid programme for fieldwork and international exchange

Campus-wide countermeasures against the spread of coronavirus have stopped outdoors fieldwork, which characterised KU's academic tradition. Only a limited number of practical trainings in a lab or field station were allowed in a smaller group or scale than before. This, according to the KU ASEAN center director, needs immediate assistance in many departments. KU was discussing some original activities to be supported by the DNU. On the director's recommendation, ASEAN center staff (university research administrators) started to make a prototype of digital materials to partially supplement the training classes and

seminars ahead of the call for proposals related to DNU. After comparing several live shooting video clips made by external companies, the staff consulted some professors, technical staff, and students. Usually, the students physically visit an experimental field station and listen to a live talk by the instructors while observing sites in front of them. Taking Kamigamo Experimental Station, Field Education and Research Center³⁰ as a safe sample site, relevant staff picked up some representative locations that would be worth recording a video.

Shooting took place at the northern edge of Kyoto city for half a day in July. A certified drone pilot from an external company took aerial video of the experimental forest from the ground level to the top of the mountain, so that the audience could grasp the entire scope of the experimental site. With the advice of professors and technical staff who usually instruct outdoor classes, a rich collection of samples in the experimental site was recorded at 360° ; for example, different pine trees and cones, metasequoia trees and their aerial roots, sliced trunk, and bamboo stems originally from other countries. Subsequently, the professor, technicians, and research administrators consulted further so that the video clip would highlight the station's characteristics. On students' request, the video screen showed a small map to the point at which one could look at a huge field station³¹. Without a VR goggle, just by a click on the screen, the audience can 'observe' the target objects as if they would be looking up and down, to the right and left. The visual effects are better with a special goggle.

This video clip was broadcast in August at a forestry seminar for undergraduate students. While some watched the video with an explanatory talk by a professor, others merely watched the clip by themselves. Their feedback reveals that because of the limited captions on the screen, it appears more effective to appreciate the video with an additional explanation by an instructor. **Many felt as if they were in the experimental station, clearly looking up at tall trees and samples in the lecture rooms or glass rooms. The students wrote that this motivated them to visit the real site once the movement control order had been lifted.**

³⁰ 'Kamigamo Experimental Station'. Field Science Education and Research Center Kyoto University <https://fserc.kyoto-u.ac.jp/kami/> Accessed 17 February 2021

³¹ 'Kyoto daigaku kamigamo shikenchi'. [video file] <https://youtu.be/mw4CxduYy9Y> Accessed 17 February 2021

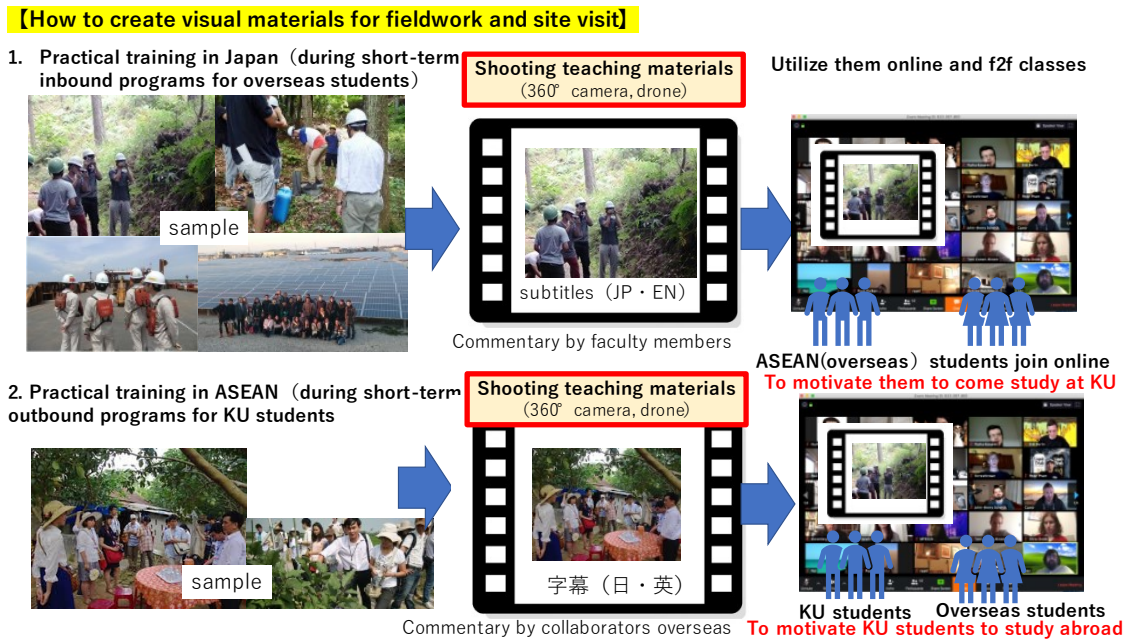


Table 8: How to create visual materials for fieldwork and site visit

With this short video clip as a prototype, ASEAN staff explore further possibilities to use digital materials to replace or supplement international exchange during the current travel restrictions, both inbound and outbound. Many KU departments related to ASEAN Committee meetings and the Wild and Wise programme responded with enthusiasm. There appears to be a heavy demand for field trips. For example, due to the spread of the coronavirus infection, the AUN winter seminar (Chapter 1.4.1) **was decided to be held online. In addition to the lectures, campus tours and cultural experiences were conducted online. Current KU students (skilled YouTubers) guided the ASEAN audience to a comprehensive virtual campus tour for more than an hour. The participants also tried origami paper craft folding over the zoom. The overall feedback on the online program is very positive, and the host professors at the graduate school of energy science are considering utilising more online material to show facilities such as biomass power plant, hydroelectric power plant and solar farm, for the ‘inbound’ ASEAN students to substitute the physical visit to the site.**

In 2020, the RSDC summer program was implemented online. Followed by a carefully designed pre-program and orientation, professors from both ASEAN and Japan were invited for lectures and students participated in the group presentation. The leader of the RSDC program from the KU engineering department was hoping to meet students again face-to-

face³² and **would introduce newly designed online videos to show field sites to a dam in construction, as the fieldtrip seems to be a popular learning experience among the participants.** There exist some video clips and photos for general visitors and the construction or promotion of a large facility (e.g. Amagase dam, Shin-Meishin Expressway, and Katsura river in Kyoto). However, for educational use, the professor provided academic advice on each location, based on his comprehensive knowledge of engineering, geography, history, and tourism, which added special academic value to the shooting and editorial process. The engineering professors and ASEAN Center staff are making original content at Amagase dam³³ and Katsura river³⁴.

In November 2020, KU's digital/hybrid initiatives to recreate fieldwork were officially approved by MEXT, and there would be additional subsidies under the framework of DUN from FY2020-2021. Other KU professors from eight departments are keen to use digital content to improve their courses. KU ASEAN Center helped to facilitate meetings with leading professors, VR companies, and other stakeholders on the shooting, and then the centre staff organised hands-on seminars on drone operation and video editing for researchers and students on campus. Digital materials can also attract inbound students to the KU. If prospective students could see its unique fieldwork on an island to observe wildlife, or visit Japanese tea farms, sea and river sides near campus, for example, they would be motivated to study here. With this expectation in mind, the KU ASEAN Center is planning to list virtual materials on the centre website.

3.2 Student's virtual experience of other cultures

Partner universities in ASEAN also invited KU students to join an online short course. Universiti Brunei Darussalam (UBD), for instance, launched a new E-GDP (E-Global Discovery Program) in 2020, where participants could intensively learn Malay language, Brunei culture and lifestyle, entrepreneurship and biodiversity with 'virtual' lecturers and participating students for six days. The programme also included live discussions on Brunei tour videos, talk by tourism representatives, and demonstration of traditional cuisines. The

³² 'RSDC Newsletter 2020 December Vol. 7'. https://www.drc.t.kyoto-u.ac.jp/rsdc/publication/drc_pdf/NL_07.pdf Accessed 17th February 2021

³³ 'Amagase dam sai kaihatsu jigyo'. [video file] <https://youtu.be/DIYEmQEMLQA> Accessed 17 February 2021

³⁴ 'Kyoto daigaku katsuragawa ryuiki'. [video file] <https://youtu.be/wh4epjRxcfg> Accessed 17 February 2021

participation fee was about US\$50 for students from UBD's partner universities. One of the KU participants commented:

“Initially, I was interested in joining a short-term international programme. Due to the COVID-19 pandemic, however, I could not travel abroad, nor could I listen to former participants' experience in international programmes. Though anxious, I dared to apply for E-GDP for trial. The scope of the programme was wide, such as Brunei culture, history, language and cultivation of business mind, and each class has enough chance to think and raise a question by oneself. Many participants from Japan, Indonesia and Malaysia, are proactive and outstanding in English. Outside the classes, I was happy to receive a warm welcome from UBD students: they introduced many places with their camera and tried out Japanese words. Before joining this E-GDP, I had zero knowledge about Brunei, but **after the online programme, I wanted to visit it. If possible, I would like to join another programme organised by a different country.**”

It appears that the KU student enjoyed the e-program more than she had initially expected. Virtually, she became aware of different cultures, not only of Brunei, but also Indonesian and Malaysian. She felt a heart-warming welcome from the UBD hosts. She was encouraged to try more international programmes, preferably to fly to other countries.

Therefore, looking at the example of KU's video clip to supplement fieldwork and UBD's E-GDP, digital materials could surely inspire KU students' academic interests in fieldwork or different cultures. After the virtual experience, they would like to visit the real site to deepen their knowledge. What are missing from the digital materials? What else could the visitors feel and observe during the fieldwork and travel to foreign countries?

At the experimental field station on the day of shooting the video clip, the summer weather was variable. Walking uphill with a helmet on, the shooting crew was drenched in sweat, severely dehydrated and affected by the strong sunshine. They were also bitten by mosquitoes. Shadows under the trees were pleasant (and air conditioners in the lecture room were comfortable). The visitors could sniff different kinds of green aroma, hear singing cicadas, and felt soft moss and fallen leaves on the ground. In the afternoon, it became cloudy and rainy, and the temperature suddenly dropped. Such intense experiences perceived through the five senses on site were not recreated on the video. After the recording, the members were exhausted, while the viewers of the video just said 'wow' with a happy smile.

UBD's physical exchange programme usually advertises as 'immerse yourself and explore

wildlife in the middle of the city' but during the E-GDP programme, the participating student could not directly smell and feel the diverse natural environment or taste the traditional dishes. On the UBD campus, visitors are often encountered by a walking reptile 1-2m in size (compared to watching a giant crocodile on screen, it can be a surprise meeting one on site). Without a sweetened drink or spicy food that could be extreme to the Japanese palate, there would be no risk of a stomachache from different lifestyles. Sitting in a cosy room in Japan, she would not feel the hot, humid climate outdoors and freezingly air-conditioned temperature indoors, which is typical in many ASEAN countries. Occasionally, due to the temporary blackout, the air conditioner and hot water would be unavailable on site. During the physical study abroad, not all people understood English or the local language. Especially at such times and in an unfamiliar environment, UBD buddies' hospitality and help in trouble could be all the more appreciated. If the student faced all the cultural issues away from the usual comfortable zone, the study-abroad programme should have left a pleasant sense of fatigue and accomplishment.

3.3 Future prospects and conclusion

Before the COVID-19, **KU's fieldwork naturally provided students with rich experience of feeling the site wholly with their five senses**, from the vegetation environment (at different levels of hilltop, low land, shore, shallow and deep water), topography, regional climate, flood and construction sites. The students were expected to comprehensively observe the site and interact with participants from partner universities, local villagers, and engineers. During the COVID-19, students' feedback proved that digital materials have inspired their academic interests in fieldwork or different cultures to some extent. **After the virtual experience, they would like to travel to the sites again.** The online short course would possibly promote attractive features of the university, just as both IUEP projects recruited students for the middle or long programmes mainly from participants of the short-term ones.

However, it is probable that the scale of the study-abroad programme after the COVID-19 crisis would be smaller than before. The expected increase in the price of international flight tickets would make the duration shorter (if the organiser prefers to keep the total participation fee and total cost minimal), while the number of participants would be smaller than before to strictly follow the safety measures.

If a small number of people or faculty members could physically go to the field sites, they can learn to utilise 360-degree° cameras, action cameras, or wearable ones, which would help create more supplementary digital materials to be shown during the online seminars. Some

students appear to be equipped with technical skills to edit video clips using special software, yet without having observed the real objects in the field station, they cannot fully understand the natural environment in an appropriate way. (*It needs more careful analysis to quantitatively measure students' learning outcomes after the introduction of the hybrid programme, but this is beyond the scope of this report.) The digital material cannot be a self-satisfactory textbook to entirely replace practical training outdoors and instructors' additional facilitation seems to be essential. Faculty members and technical staff of KU, their long-term collaborator in the partner institute, or KU's alumni accepting interns in an engineering company would provide more commentary on the site and raise questions to students.

There are some prerequisites for instructors to invest sufficient time and effort in handling additional digital content for education and research. At the KU's campus-wide educational symposium held in September 2020³⁵, about 66/110 respondents found it painstaking to teach classes online during the spring semester. The ASEAN center staff discussed with a KU associate professor from the Philippines and admitted that he struggled to prepare and record all the usual classes during the Spring semester of 2020. He hoped that KU offers institutional support in the digital transformation, for example, to hold a live discussion between Japan and ASEAN countries when hosting an international conference. Another associate professor in humanities said that when live-streaming academic talks via SNS, it is necessary for faculty members to always monitor and ensure the academic quality of the event, while picking up stimulating questions both for the panelists and audience. It would be best for a professional staff member as an assistant director to help create interesting digital content that fits KU's academic tradition. Both of the associate professors requested that KU should retain skilled staff who are versed in research promotion, international affairs, and internal regulations at the university.

Some other universities in Japan appear to be outsourcing hybrid/international programmes to external companies such as travel agencies or academic consultants, but KU appears to be designing most of the content in-house. Being independent, many KU professors have a strong attachment and responsibility to implement the programmes in ASEAN by themselves. Over the years, they have built and led unique programmes based on firm trust with local counterparts (collaborators, alumni, and company employees) in the ASEAN region. They hosted face-to-face meetings, went to field trips, eaten off from the same pot, or lived under

³⁵ '24th Kyoto University Education Symposium' <http://www.fd.kyoto-u.ac.jp/activity/symposium2020.pdf> Accessed 17 February 2021

the same roof. ASEAN center staff, including URAs and early career administrators, are trying to build such personal relationships with researchers and colleagues in the partner institutes, but KU staff are often transferred to a different position every two to three years. Some of them have been on short-term contracts for several years. Furthermore, many of the KU professors who have been leading academic activities in ASEAN were to retire in a couple of years, but hopefully their hands-on experience gained from physical interaction would be successful for young talent and new partners, while KU introduced a hybrid / digital programme during the COVID-19 crisis period.

Led by the former President Juichi Yamagiwa, a famous fieldworker observing gorillas in nature, KU fosters qualities of ‘Wild and Wise’ in the students by providing them with opportunities to engage in dialogue and practices on and off campus³⁶. During the COVID-19 pandemic, they are expected to correctly interpret information through digital devices and make decisions based on their knowledge and experience.

Asked in September 2020 about what was important for KU’s education in the future, some teachers responded: ‘Regardless of face-to-face classes or online classes, KU education should properly inspire students’ academic interests’; ‘KU students should be taught to take leadership’; ‘They should be given enough time to think and learn freely by themselves’.

FY 2020(R2)	FY 2021(R3)	FY 2022(R4)	FY 2023(R5)	FY 2024(R6)	FY 2025(R7)
KU develops digital contents (in Japan)		check and action			
	& (in ASEAN) if a limited number of faculty members can travel abroad				
KU ASEAN Center supports its educational activities in ASEAN			KU (hopefully) sends small no. of students abroad		
joins study-abroad fairs and promote KU's attractive features online			KU (hopefully) welcomes more inbound students		
improves hybrid programs, symposium and activities at on-site laboratories					
maintains and cultivates friendly relationship with partner institutes					
	KU's 3rd mid-term plan and objectives ends				
MEXT's support on current IUEP projects in ASEAN ends	KU plans a new internship program under industry-government-academic consortium				
	MEXT's support on DNU ends	MEXT's project to support URA ends	KU places professional staff for international affairs		

Table 9: Annual schedule (plan)

³⁶ ‘Wild and Wise’. Kyoto University https://www.kyoto-u.ac.jp/window/en/window_01.html Accessed on 16 February 2021

It is still uncertain when the COVID-19 pandemic can be controlled and travel restrictions will be lifted. However, new modes of hybrid programmes and blended mobility should be explored in future studies.

In closing, this report introduced some of KU's various educational and research activities based on fieldwork and interdisciplinary approaches in the ASEAN region over the years. As of now in February 2021, many students in Japan and ASEAN countries are not able to travel to other countries and instead are mainly instructed in online classes with their 'virtual' teachers and friends. Once inspired, they can join international exchanges and internships to develop academia and society. To nurture such talent, the Japanese government and KU should envision more concrete and sustainable measures to secure the resources necessary to create hybrid programmes or to hire professional staff. We sincerely wish to develop an appropriate mode of international exchange.

Appendix

Overseas partner institutions in ASEAN (as of August 2020)

Brunei Darussalam

- [Universiti Brunei Darussalam](#) (2014)

Republic of Indonesia

- [Institut Teknologi Bandung](#) (2006)
- [University of Indonesia](#) (2008)
- [Gadjah Mada University](#) (2012) (2017 renewed)
- [IPB University \(formerly Bogor Agricultural University\)](#) (2013) (2018 renewed)
- [Universitas Hasanuddin](#) (2014) (2019 renewed)
- [Indonesian Institute of Sciences \(LIPI\)](#) (2014)
- Agency of Peatland Restoration (Badan Restorasi Gambut), Republic of Indonesia (2016)
- [University of Riau](#) (2020)

Lao People's Democratic Republic

- [National University of Laos](#) (2002) (2007 renewed)

Malaysia

- [University of Malaya](#) (2008)
- [Universiti Teknologi Malaysia](#) (2016)
- [Universiti Kebangsaan Malaysia](#) (2017)

Republic of the Union of Myanmar

- [Mandalay Technological University](#) (2013)

- [Yangon Technological University](#) (2013)
 - [University of Yangon](#) (2015)
 - [Yezin Agricultural University](#) (2017)
- Republic of the Philippines**
- [University of the Philippines](#) (2015)
- Republic of Singapore**
- [National University of Singapore](#) (1999)
 - [Nanyang Technological University](#) (2013)
- Kingdom of Thailand**
- [Kasetsart University](#) (1984)
 - [Thammasat University](#) (2005) (2017 renewed)
 - [Chulalongkorn University](#) (2005)
 - [Mahidol University](#) (2014) (2019 renewed)
 - [Chiang Mai University](#) (2014)
 - [Asian Institute of Technology](#) (2017)
 - [National Science and Technology Development Agency](#) (2018)
- Socialist Republic of Viet Nam**
- [Vietnam National University, Hanoi](#) (2007)
 - [Hue University](#) (2007)
 - [Hanoi University of Science and Technology](#) (2009)
 - [University of Da Nang](#) (2014) (2019 renewed)
 - [Vietnam Academy of Social Sciences](#) (2020)
- Head Quarters, Thailand**
- [ASEAN University Network \(AUN\)](#) (2009)
 - [ASEAN + 3 University Network \(ASEAN+3 UNet\)](#) (2012)
- Head Quarters, Indonesia**
- [Center for International Forestry Research \(CIFOR\)](#) (2016)

University-level student exchange partners in ASEAN (as of April 2020)

Country	Institution
Brunei	Universiti Brunei Darussalam
Indonesia	Gadjah Mada University

Country	Institution
	Institut Teknologi Bandung
	University of Indonesia
Malaysia	Universiti Teknologi Malaysia
	University of Malaya
Philippines	University of the Philippines
Singapore	Nanyang Technological University
	National University of Singapore
Thailand	Chiang Mai University
	Chulalongkorn University
	Kasetsart University
	Thammasat University
Vietnam	Hue University
	University of Danang
	Vietnam National University, Hanoi

List of double degree programs with ASEAN universities (as of April 2020)

Country	Partner University in ASEAN	Faculties	Degree
Indonesia	Gajah Mada University	Graduate School of Agriculture	Master's
	Bogor Agricultural University	Graduate School of Global Environmental Studies	Master's

Country	Partner University in ASEAN	Faculties	Degree
		Graduate School of Agriculture	
	Institut Teknologi Bandung	Graduate School of Agriculture	Master's
Thailand	Kasetsart University	Graduate School of Agriculture	Master's
	Chulalongkorn University	Graduate School of Medicine (School of Public Health) Graduate School of Energy Science	Master's
	Mahidol University	Graduate School of Medicine (School of Public Health) Graduate School of Global Environmental Studies	Master's
	King Mongkut's University of Technology Thonburi	Graduate School of Energy Science	Master's
Malaysia	University of Malaya	Graduate School of Medicine (School of Public Health) Graduate School of Energy Science	Master's

The number of students who joined KU double degree programs since FY2015

KU graduate school	Country / region	Partner Institution	FY2015		FY2016		FY2017		FY2018		FY2019											
			In		Out		In		Out		In		Out									
			M	D	M	D	M	D	M	D	M	D	M	D								
Economics	UK	University of Glasgow																				
Science	France	École Normale Supérieure de Lyon							1			1										
Public Health, Medicine	Malaysia	University of Malaya	2	1	3		1															
Public Health, Medicine	Thailand	Chulalongkorn University	1		3		1	1		1												
Public Health, Medicine	Taiwan	National Taiwan University					6		7			9										
Public Health, Medicine	Thailand	Mahidol University																				
Agriculture	Indonesia	Institut Teknologi Bandung					2		4			6										
Agriculture	Indonesia	Gadjah Mada University	5	2	7	2	5		3													
Agriculture	Thailand	Kasetsart University	2		4	2	5	2	3	1		2										
Agriculture	Indonesia	Bogor Agricultural University							2			4										
Agriculture	Taiwan	National Taiwan University								2	1	2										
Management	Taiwan	National Taiwan University	2		2		1		1	1	2	3										
Management	USA	Cornell University										3										
Energy Science	Malaysia	University of Malaya		1		2	3	1	2	1	2	1										
Energy Science	Indonesia	Institut Teknologi Bandung																				
Energy Science	Thailand	Chulalongkorn University				2		2		2												
Energy Science	France	Université de Bordeaux							1			1										
Global Environmental Studies	Indonesia	Bogor Agricultural University							2	1	6	1										
Global Environmental Studies	Thailand	Mahidol University						1	2	1	2	1										
Global Environmental Studies	China	Tsingha University										2										
Total			12	0	4	0	19	0	8	0	24	0	7	0	26	2	10	0	36	2	11	0
			M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D	M	D
The number of students who joined double degree programs from 2015 to 2019.			In	Out	In	Out	In	Out	In	Out	In	Out										
※Professional Degrees are included in Master's Degree.			2015		2016		2017		2018		2019											