

Summary Sheet

1 Outline of the Project	
Country: 10 ASEAN countries	Project Title : ASEAN University Network/Southeast Asia Engineering Education Development Network (AUN/SEED-Net) Project Phase 3
Thematic Area : Higher Education	
Division in Charge : Technical and Higher Education Team, Higher Education and Social Security Group, Human Development Department	
Project Period : (R/D) December 14, 2012 March 2013 – March 2018 (five years)	Cooperation Scheme : Technical Cooperation Project
	Total Cost : 3.95 billion JPY
	Counterpart Agency : 26 Member Institutions (MIs) and 10 ministries in charge of higher education in 10 ASEAN countries.
	Supporting Organization in Japan : 14 Supporting Japanese Universities (Hokkaido University, Keio University, Kyoto University, Kyushu University, Nagoya University, National Graduate Institute for Policy Studies, Osaka University, Shibaura Institute of Technology, Tohoku University, Tokai University, Tokyo Institute of Technology, Toyohashi University of Technology, The University of Tokyo and Waseda University)
	Other related cooperation: Technical Cooperation Projects: ASEAN University Network/Southeast Asia Engineering Education Development Network (AUN/SEED-Net) Project Phase 1 (March 2003 – March 2008) and Phase 2 (March 2008 – March 2013), The Project for Educational Capacity Development of Institute of Technology of Cambodia (October 2011 – October 2015), The Project for Enhancement of Engineering Higher Education in Myanmar (October 2013 – October 2018) Grant Aid: The Project for the Improvement of Educational Equipment of the Department of Geo-Resources and Geotechnical Engineering of the Institute of Technology of Cambodia (August 2011 – June 2014), The Project for Enhancing Technological Universities in Myanmar (August 2014 – June 2017). Yen Loan: The Development Project of the Institute of Technology in Bandung (January 2009 – September 2015)
1-1 Background of the Project	
<p>The concept of AUN/SEED-Net evolved from a 1997 initiative proposed by then-Prime Minister of Japan Ryutaro Hashimoto. This initiative aimed at tackling the financial crisis in ASEAN through human resources development in higher education. Prior to the financial crisis, Japan actively supported the strengthening of engineering education in ASEAN. In this connection, it was recognized that the transfer of Japan's experience and know-how in research and education to higher education institutions in ASEAN in the field of engineering would be effective in developing human resources in response to globalization within ASEAN. To put this concept into action, AUN/SEED-Net was established as a sub-network of the ASEAN University Network (AUN) and the inception project was implemented for two years (2001 – 2003). Phase I of the Project was then officially launched in March 2003 for a five-year period (2003 – 2008). Phase I was implemented to build the foundation for networks among MIs and improve the qualifications of academic staff. Phase II was implemented in March 2008 for a five-year period (2008 – 2013) to further strengthen the foundation of the Project and expand the scope of project activities, as well as continue scholarship programs to upgrade the qualifications of academic staff. Throughout both phases, nineteen (19) universities in ASEAN and eleven universities (11) in Japan participated in the Project.</p> <p>The AUN/SEED-Net Project phase 3 began in March 2013 after the phase 2 project, in which twenty-six (26) universities in ASEAN and fourteen (14) universities in Japan participated in the Project. The phase 3 project has been implemented with the aims of developing advanced human resources necessary for ASEAN's sustainable development and pursuing activities that will enhance the education and research capacity of the engineering universities in ASEAN and strengthen the academic network among ASEAN and Japanese universities.</p>	

In July 2017, before the end of the cooperation period, a Terminal Evaluation of the Project was carried out in order to examine the project performance, assess the Project from the viewpoints of five evaluation criteria, make recommendations and draw lessons learned from the results of assessment.

1-2 Project Overview

(1) Overall Goal

The advanced and globalization of industry and academic activities, addressing common regional issues,¹ are promoted in Southeast Asia.

(2) Project Purpose

A region-wide system for advanced research and education is established by Member Institutions (MIs),² in collaboration with Japanese Supporting Universities.

(3) Outputs

- Output 1: Linkage among MIs, industry and communities,³ is strengthened.
- Output 2: System to conduct research activities addressing regional common issues is established.
- Output 3: Research and educational capacity of academic staff at MIs is improved.
- Output 4: Academic network among MIs and JSUs is strengthened.

(4) Inputs

<Japanese side>

- The number of experts:
 - Chief Advisor (2), Deputy Chief Advisor (3) and Project Coordinator (8)
- Japanese Professor Dispatched (Japanese Professor Dispatch Program: JPDP):
 - A total of 372 persons (actual from until August 2017)
 - A total of 413 persons (including a plan until October 2017)
- Short-term Research Program in Japan (SRJP):
 - A total of 156 academic staff of MIs (actual until August 2017)
- Short-term Visit Program in ASEAN (SVAS):
 - A total of 177 academic staff of MIs (actual from JFY 2013 to JFY 2017)
- Total project cost: 3.93 billion yen (including Local Operation Cost and Third Country Trainings of 674.03 million Thai bahts (approximately 2.23 billion yen)⁴ (actual from JFY 2013 to JFY 2016 and plan for JFY 2017).

<Member Countries and Institutions>

- Assignment of necessary administrative and academic staff at each MI
- Partial financial support for the degree programs (mainly tuition fees), amounting to 304.4 million JPY (JFY 2014 – JFY 2016)
- Provision of the AUN/SEED-Net Secretariat office space with costs of utilities, communications and water supply. (Chulalongkorn University)
- Allocation of Assistant Director (1) and the secretaries (2) for AUN/SEED-Net Secretariat (providing 15 million THB from PHEC for personnel cost of the secretaries (until August 2017).
- Other external resources of collaborative research funds supported by the partner institutions for CRI as counter budget, amounting to 63,459 USD.

2 Evaluation Team

¹ Main regional common issues addressed by the Project are natural disaster, environment, energy, material and natural resources.

² Member Institutions (MIs) refer to the leading universities in the engineering field in ASEAN which are nominated by the ASEAN Member Countries.

³ Communities include national and local governments and agencies.

⁴ The exchange rate was 1 JPY = 3.1402 THB (as of March 2014), 1 JPY = 3.6779 THB (as of March 2015), 1 JPY = 3.1960 THB (as of March 2016), 1 JPY = 3.2314 THB (as of March 2017) according to JICA exchange rate. For the estimation of the JFY 2017's budget, the exchange rate of 1 JPY = 3.27663 THB (as of February 2017) was applied.

Member of the Evaluation Team	Task	Name	Title	Group
	Leader	Mr. Masato KUMAGAI	Deputy Director General and Group Director for Higher Education and Social Security, Human Development Department, JICA	A
	Higher Education	Mr. Naoki UMEMIYA	Director, Technical and Higher Education Team, Higher Education and Social Security Group, Human Development Department, JICA	C
	Cooperation Planning	Ms. Yoshiko MIURA	Deputy Director, Technical and Higher Education Team, Higher Education and Social Security Group, Human Development Department, JICA	B
	Evaluation Analysis 1	Mr. Kaneyasu IDA	Senior Consultant, Tekizaitekisho LLC	C
	Evaluation Analysis 2	Ms. Ayako NAMURA	Consultant, Tekizaitekisho LLC	A
	Evaluation Analysis 3	Ms. Ai ISHITOBI	Consultant, Tekizaitekisho LLC	B
Group A: Indonesia, Singapore and Myanmar Group B: Malaysia, Cambodia and the Philippines Group C: Vietnam, Laos and Thailand.				

Period	July 16 to 28, 2017	Type of Evaluation : Terminal Evaluation
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3 Results of Evaluation

3-1 Achievements confirmed through evaluation

(1) Output 1: Linkage among MIs, industry and communities, is strengthened.

According to the responses of the questionnaire that the Team conducted (15 responses), MIs felt that UIL has been strengthened to some extent through the project activities (the average score was 2.9 on a four-point scale). From JFY 2013 to JFY 2016, the Project received 80 applications of CRI from MIs, out of which 35 research projects, around ten researches per year, were awarded over the four years. The amount of research funds received from the partner institutions of CRI is around 63,459 USD.

Table 1: Number of CRI and other collaborative researches conducted between MIs and Industries/communities (2013 -2016)

CRI				
Number applied	Number Adopted	Total budget (USD)	Approximate counter budget by company/ community (USD)	Entire number of collaborative research with industry/community
80	35	317,298	63,460	3,638

Source: Data provided by AUN/SEED-Net Secretariat and Annual Report of AUN/SEED-Net Project (JFY 2013-2015). In regard to “the entire number of collaborative research with industry/community”, the data was based on the questionnaire given to MIs.

CRI, providing research funds, increased an opportunity for MIs to conduct joint research with industries/communities. In addition to CRI, other various activities such as UIL seminars or MOT have promoted UIL activities. HCMUT and a Japanese foundation-related construction company discussed joint activities at a UIL seminar and also initiated the exchange program for academic staff and the company’s engineers, and also organized the first international workshop of the Japanese Geotechnical Society with the support of the company, in addition to accepting interns.

Although the Project contributed to strengthening the UIL, some MIs felt that it was difficult to find a co-investigator from a JSU or a partner institution, since it is not easy to find common interests among stakeholders.

(2) Output 2: Systems to conduct research activities addressing regional common issues is established.

The research activities addressing regional common issues have been promoted through the project activities. From JFY 2013 to JFY 2016, the Project received 138 application for Collaborative Research for Regional Common Issues (CRC) and a total of 41 CRC have been adopted and carried out. A total of 60 research papers were issued and a total of

37 presentations were made on regional common issues through 17 CRC, that enabled the Team to collect detailed information from MIs. This means that three (3) research papers were issued and two (2) presentations were made per research project. Judging from this result, a higher number of research papers and presentations⁵ would be issued/presented for 41 CRC conducted from JFY 2013 to JFY 2016. On the other hand, the PDM did not specify the target values for these indicators; therefore, the Team could not assess if these indicators were satisfied. Regional conferences on the five regional common issues (i.e. natural disasters, environmental issues, energy, materials and natural resources) were held 20 times from JFY 2013 to JFY 2016.

Providing specific research funds and organizing the regional conferences on the regional common issues as the project activities encouraged MIs to pursue research activities on regional common issues. The Project also helped MIs and JSUs to find other competitive research funds such as the Science and Technology Research Partnership for Sustainable Development (SATREPS) provided by the Japan Science and Technology Agency (JST). In 2015, the SATREPS research fund was awarded to ITC, Tokyo Institute of Technology, Yamagata University, Institute for Global Environmental Strategies (IGES) on “Establishment of Environmental Conservation Platform of Tonle Sap Lake”. In sum, the Project has successfully promoted research activities addressing regional common issues.

(3) Output 3: Research and educational capacity of academic staff at MIs are improved.

Since most of the AUN/SEED-Net scholarship recipients in Phase 3 are still studying, only 53 scholarship grantees obtained the degrees (master’s degree), as of December 2016, among a total of 392 to whom the scholarships were granted. Considering the completion rate of AUN/SEED-Net scholars from JFY 2001 to JFY 2013⁶, it is estimated that approximately 350 recipients would obtain degrees in the future. The number of recipients for master’s degrees, doctoral degrees in Japan (PhD Japan) and the Doctoral Degree Sandwich (PhD Sandwich) mostly met the annual plan. On the other hand, the number of recipients for Doctoral Degree in Singapore (PhD Singapore) and the Integrated Graduate Degree Program (Integrated) were lower than the quota. PhD Singapore has not had many applicants since the requirement for PhD students is very high⁷. In regard to the Integrated Program, it turned out that continuous study through master’s and PhD programs was very difficult for many students since they wanted to change their research topics or their supervisors were changed for some reason⁸.

Table 2: Number of scholarship students who received scholarship and obtained degree

	Quota per year	2013	2014	2015	2016	Total	No of scholars obtained degree
Master’s	50	59	49	42	49	199	53
PhD Japan	20	18	19	19	34	90	0
PhD Sandwich	20	20	14	18	23	75	0
PhD Singapore	10	5	6	6	0	17	0
Integrated	10	0	6	3	2	11	0
Total	110	102	94	88	108	392	53

Source: AUN/SEED-Net Secretariat

Looking at the time between the start of studies and graduation, the recipients of the AUN/SEED-Net scholarship in the master’s degree program (master’s) completed their study in two years as required. The recipients of the PhD Sandwich tend to take more time to graduate than required, mostly 3.2 to 3.5 years, since the grantees have to adjust to two different environments of studying, which sometimes takes time.

According to the questionnaire given to MIs (15 respondents), most of responded the MIs acknowledged that the research and educational capacity of academic staff at MIs was improved greatly or to some extent (the average was 3.4

⁵ Calculating from the average number, a total of 123 research papers and 82 presentations might be issued/made for 41 CRC.

⁶ Since most of the students who received the scholarship in JFY 2014 are still studying, the completion rate is calculated from JFY 2001 to JFY 2013.

⁷ According to the universities in Singapore, they require TOEFL 600 and GRE score. The six scholarships were awarded in JFY 2015, while 28 applicants applied for the program.

⁸ Interview with MIs and the AUN/SEED-Net Secretariat. The number of applications tends to decrease: 36 for JFY 2014, 16 for JFY 2015 and 6 for JFY 2016.

on a four-point scale) through the project activities. In particular, SIs in CLMV countries admitted that the long-term support of AUN/SEED-Net scholarship contributed to upgrades in academic staff's qualification in their master's and PhD programs. On the other hand, it was observed that the needs of SIs have been changed: some SIs now put more priorities on PhD programs or other programs among the project activities since most of the academic staff already acquired higher degrees. HIs⁹, which send academic staff to other HIs or JSUs in PhD program, also recognized that their academic staff enhanced their qualifications and improved PhD programs at the respective MIs.

(4) Output 4: Academic network among MIs and JSUs is strengthened.

The *ASEAN Engineering Journal* has played an important role in the promotion of research and education in the region. Also, the Regional Conference has contributed to stronger linkages and collaboration among MIs and JSUs. In Phase 3, many MIs were able to host the Regional Conference in various fields. Other activities, such as Japanese Professors Dispatch Program, Short-term Research Program in Japan and Short-term Visit Program in ASEAN, have also helped to enhance networking among MIs to JSUs, providing opportunities to exchange opinions or ideas about the research activities, receiving technical advice and jointly supervising AUN/SEED-Net students. In short, the academic network among MIs and JSUs have been strengthened through these project activities.

(5) Project Purpose: A region-wide system for advanced research and education is established by Member Institutions, in collaboration with Japanese Supporting Universities.

In Phase 3 project, HIs increased the numbers of departments to accept AUN/SEED-Net students and operated the international graduate degree programs. It should be noted that HIs in Malaysia and the Philippines have implemented degree programs in English for a long time. Furthermore, these MIs recognized that the scholarship students of AUN/SEED-Net have helped to invigorate international graduate degree programs at their MIs. The Team could not identify any salient project achievements toward the development of joint international graduate programs (i.e. joint degree or double degree programs), the mobility programs such as student exchange programs, academic staff exchange programs or short-term courses have been implemented jointly by MIs and JSUs during the Phase 3 period. These can be a good and important step toward development of joint or double degree programs in the future. Although the issue of developing regional academic network is actually for the verification of the project impact, MIs reported that one MI recommended another MIs to join in an existing academic network as a new member, and an academic forum on energy engineering¹⁰ was initiated by the MIs, as a result of discussion at the Regional Conference on energy field. Since the Project has been establishing a region-wide system for advanced research and education through scholarship program, joint research programs such as CRA, CRC and CRI, strengthening of regional academic network and promotion of UIL, it can be concluded that the Project Purpose is achieved to some extent.

(6) Overall Goal: The advanced and globalization of industry and academic activities, addressing common regional issues, are promoted in Southeast Asia.

At the terminal evaluation, not many MIs have acquired patents as a result of the CRA, CRC, or CRI and UPM is the only MI that acquired a patent based on CRI and also obtained 37 patents at the Faculty of the Engineering in total from 2013 to 2016. ITB-INA and UPM are successful in producing prototypes as a result of CRI. HCMUT is also active and successful in producing prototypes, commercializing and acquiring licensing as results of CRA, CRC and CRI. Many MIs now emphasize the university policy of becoming research-oriented universities and conduct research useful for social or economic development. In this term, the involvement of Technology Licensing Organization (TLO) Offices or Incubation Center of MIs would help to promote more acquisition of patents as well as further encourage CRC and CRI.

Table 3: Results of CRA/CRC/CRI and number of patents jointly obtained by private companies (2013 – 2016)

MIs	Obtained as a result of CRA/CRC/CRI				No. of Patents obtained with industry (Engineering Faculty)
	Patents	Prototype	Commercialized	Licensing	

⁹ Except some MIs in Thailand because their academics staff has good qualification already.

¹⁰ Sustainable Energy and Environment (SEE) Forum formed in 2012 (according to the interview with ITB-INA).

ITB-INA		1	-	-	na
UM	1	1	-	-	2
UPM	1	1	-	-	37
UTM	-	-	-	-	3
BUU	-	-	-	-	4
CU	-	-	-	-	7
TU	-	-	-	-	1
KMITL	-	-	-	-	1
HUST	-	-	-	-	2
HCMUT	-	3 in process 1	In process 3	In process 2	0
Total	2	7	3	2	57
NTU	-	-	-	-	295

Source: Questionnaire survey to MIs.

According to the report on Research Assessment issued in December 2016 by AUN/SEED-Net Secretariat, 56% (out of 103 researchers in total) rated the research results as highly beneficial to society and industry and 40% of them rated them as “beneficial to some extent”. At the time of the Terminal Evaluation, the salient contribution addressing regional common issues have not been identified yet, but this may be realized in the future.

3-2. Summary of Evaluation Results

(1) Relevance

The Project is in line with development and education policies of ASEAN, which aims at supporting higher education through increased affiliations between universities, and policies of member countries which plans to improve the quality and the global competitiveness of universities, and Japan’s ODA policy which prioritizes the support to human industrial development for (sustainable) economic development. The Project also matches well with needs and priorities of MIs which aim to enhance their educational capacity, internationalization and the promotion of UIL activities. The approach to achieve the Project Purpose is appropriate. Therefore, the relevance of the Project is high.

(2) Effectiveness

The Project has been establishing a region-wide system for advanced research and education through scholarship programs, joint research programs such as CRA, CRC and CRI, strengthening of regional academic network and the promotion of UIL. On the other hand, since the development of international graduate degree programs and joint international graduate programs, which were the indicators of the Project Purpose have not been fully progressed, in evaluating the Project with indicators of the current PDM, the prospect of achieving the Project Purpose is moderate. It should be noted, however, that the Project does not have any specific activities to achieve these indicators and hence these indicators are not appropriate to measure the achievement of the Project Purpose. Since all the necessary components to achieve the Project Purpose are included in the Outputs, the linkage between Outputs and the Project Purpose is logical and appropriate.

(3) Efficiency

Inputs contributed to the achievements of Outputs, and there have been no major issues observed in terms of the quality, quantity and timing of the inputs. Besides, there were cases observed where the inputs were effectively utilized and contributed to producing Outputs due to the synergistic effects with other JICA projects provided for MIs. Therefore, the efficiency of the Project is high.

(4) Impact

While social implementation of research results has not fully progressed at the time of the terminal evaluation, since the advancement and globalization of academic activities addressing regional common issues have progressed to some extent, if support for social implementation of research results is strengthened, the prospect of achieving the goal in 3 to

5 years after the Project is relatively high. Besides, by the time of the terminal evaluation, various positive impacts were caused by the Project such as “contribution by MIs to non-member universities in their own countries”, “contribution to international development projects”, “contribution to JSUs” and “retention of graduate students in ASEAN”. There was no negative impact observed by the Project. Therefore the Impact of the Project is high.

(5) Sustainability

While policy, organizational and technical sustainability is high and institutional sustainability is relatively high, financial sustainability is low. Since the Project is unlikely to be sustained without JICA’s support, the sustainability of the Project is judged as moderate.

■ Policy and institutional perspective

Sustainability is high from a policy standpoint while sustainability from an institutional standpoint is relatively high. The Project is aligned well with the policies of ASEAN and member countries and the needs of MIs. Significant changes to the policies and needs in the near future are not expected at the time of the terminal evaluation. On the other hand, while the overall direction of the policies and needs remains the same, the focuses of each country and MI have diversified. Therefore assistance especially for the promotion of UIL needs to be tailored according to the needs and circumstances of individual member countries and MIs after Phase 3.

Regarding institutional sustainability, mobility programs such as student exchange programs were developed and therefore the establishment of institutions to conduct sustainable activities between MIs and JSUs was moved forward to some extent. Also, loose academic networks were established based on personal connections. It is essential to develop institutional arrangements to sustain and expand such networks.

■ Financial/organizational perspective

While the financial sustainability of the Project is low, organizational sustainability is high. Out of the total expenses of the Project, the percentage of member countries and MIs is small. It is impossible to sustain the Project activities without financial support from JICA. Therefore financial sustainability of the Project is low.

Although the post of Executive Director had been vacant at the time of the terminal evaluation and there was turnover of some experienced local staff members during Phase 3, the Project has been implemented without major hiccups. There have been no major issues observed in terms of organizational sustainability. In addition, many coordinators of MIs and JSUs have been involved in the Project since previous phases and knowledge and experience about the Project has been accumulated in them.

■ Technical perspective

The technical sustainability of the Project is high. At the time of the ex-post evaluation (October 2015), about half of the scholarship graduates (49.3%) of junior ASEAN countries and Indonesia went back to SIs and worked as teachers. According to the AUN/SEED-Net database, other many graduates work at universities, in the private sector and in governments. Since it is likely that they work in their countries, educational and research capacities enhanced through the Project have been sustained and strengthened within the ASEAN region. Moreover, through the Project, networks between MIs and between MIs and JSU have been strengthened, and it is expected that interaction among them will be sustained through the networks after the Project ends. Therefore the technical sustainability of the Project is considered to be high.

3-3. Factors Promoting Project Effects

(1) Factors concerning to Planning

- Since there are multiple schemes to develop and strengthen networks between researchers, researchers were able to develop networks by utilizing one scheme, promote collaboration between them by utilizing the other one, and enhance their educational and research capacity.
- Long term support for researchers, which is one of the characteristics of the AUN/SEED-Net scholarship, is conducive to not only the continuous capacity building of teachers, but also the promotion to attract excellent applicants as a merit that other scholarships do not have.

(2) Factors concerning to Implementation

- Many coordinators of MIs have been involved in the Project since previous phases. Their accumulated knowledge and experience contributed to the efficient implementation of the Project.
- The trust built between JSUs and MIs since Phases 1 and 2 resulted in strengthening institutional relationships between them in terms of development of mobility programs and signing of new MOUs.

3-4. Factors Inhibiting Project Effects

(1) Factors concerning to Planning

- Although joint international graduate programs such as Joint Degree Programs and Double Degree Programs, and the accreditation of joint program between JSUs, MIs and the Secretariat by issuing a joint certificate were expected as effects of the Project at the time of the detailed planning survey, they were not largely realized due to various reasons including different educational contents and differences between the education systems of various countries.
- In the current PDM, there are activities not implemented or indicators not directly related to activities. Moreover, since the data for some indicators was not collected by the time of the terminal evaluation, it was difficult to collect them from all MIs within the limited time allowed for the evaluation. Also, no targets were set for each indicator. These issues made it difficult to evaluate some quantitative indicators.

(2) Factors concerning to Implementation

- Nothing in particular.

3-5. Conclusion

The Project is in line with the development and education policies of ASEAN and member countries, Japan's ODA policy, and the needs and priorities of MIs, and the approach to achieve the project purpose is appropriate. Therefore the relevance of the Project is high. While the Project has been establishing a region-wide system for advanced research and education through scholarship programs, since the development of joint international graduate programs has not fully progressed, the effectiveness of the Project is considered to be moderate. Since the inputs of the Project contributed to the achievements of the expected outputs, and there have been no major issues observed in terms of the quality, quantity and timing of the inputs, the efficiency of the Project is high. If support for the social implementation of research results is strengthened, the prospect of achieving the Overall Goal is relatively high and various positive impacts of the Project were observed. Therefore the Impact of the Project is high. Regarding sustainability, while policy, organizational and technical sustainability is high and institutional sustainability is relatively high, financial sustainability is low. Since the Project is unlikely to be sustained without JICA's support, the sustainability of the Project is judged as moderate.

While the Project achieved a certain result in establishing a region-wide advanced research and education system by MIs with the outcomes since Phase 1, further activities are required in order to sustain, strengthen and expand the system from the viewpoint of project sustainability. Therefore, it is important to continue the Project for another phase, and assist in the maintenance, advancement and internationalization of the system.

3-6. Recommendations

(1) Explore a new strategy to promote joint graduate programs between JSUs and MIs

At Phase 3, although organizational joint graduate programs such as Joint Degree programs or Double Degree programs were not significantly developed, mobility programs such as student exchange programs and academic staff exchange programs were newly developed. It is essential to sustain and strengthen the networks developed during Phase 3 and turn them into more organizational initiatives. As discussed above, the needs of MIs on the scholarship programs have diversified and some MIs need the collaborative research programs more than the scholarship programs. In order to sustain and expand the networks built during Phase 3 and respond to the diversified needs on education and research of MIs, it is imperative to explore a new strategy to promote joint graduate programs that JSUs and MIs can develop more easily during the next phase.

(2) Promote UIL according to the needs of each country and MI

Activities to promote UIL vary by MI, and therefore activities the Secretariat is expected to assist also vary. It is also expected that effective UIL activities would be different according to the scale of industries in each member country.

Therefore it is necessary to respond to the needs of each country and MI regarding the activities to promote UIL during the next phase.

Since it is expected that assistance will be required in supporting start-ups and entrepreneurs and utilization of patents as research capacity of MIs is further improved, it has become more important to collaborate with incubation centers and TLOs of MIs, as well as to facilitate matching between researchers and companies utilizing the database of researchers. With the specialization of assistance in promoting UIL activities, it is necessary for the Secretariat to establish a system to obtain advice from an experienced expert on UIL.

(3) Implement internal monitoring according to PDM

There are activities that were not implemented and indicators irrelevant to activities in PDM. In addition, since the data for some indicators was not collected and the targets of indicators were not set by the time of the evaluation, the Team found it difficult to conduct quantitative assessments of them. Therefore, during the next phase, it is paramount to set the targets for indicators, and check the progress of the Project and achievement status of indicators at a regular meeting such as SCM and/or WGM.

(4) Establish a support system inside MIs and strengthen information sharing by the Secretariat

A limited number of staff members are assigned to the Project at MIs and it is sometimes difficult for them to fully respond to the Project. This would become more difficult if more departments were to join the Project during the next phase. Therefore there is a need for discussion among stakeholders about a system to support the Project (e.g. the assignment of a full-time employee) inside MIs, and develop as well as strengthen it. It is also indispensable for the Secretariat to examine the ways to quickly and flexibly respond to inquiries and requests from MIs, such as uploading the information on to the FAQs and posting common misunderstandings on the AUN/SEED-Net website, or having a meeting with coordinators of MIs taking the opportunities such as Regional Conferences or FMM, in addition to annual monitoring visits to MIs.

(5) Facilitate matching between researchers

During the terminal evaluation survey, some MIs expected that the Secretariat would facilitate matching between researchers of other MIs and JSUs. In order to further strengthen networks of researchers within the region and between Japan and ASEAN, it is desirable to facilitate the matching between researchers, for example by uploading the information for matching on the website, or establishing opportunities to match them at venues such as Regional Conferences.

(6) Establish an alumni association

One of the purposes of the Project is to enhance the research capacity of researchers by strengthening their academic networks. Researchers who have been involved in the Project through scholarship programs and/or joint research projects maintain networks through social media such as Facebook and utilize it for joint researches and UIL activities. In order to maintain, strengthen and expand these networks, it is effective for MIs to establish an organization for current scholarship students and alumni to gather regularly.

(7) Organize and examine quantitative information of inputs and outputs of each program

The Project has been implemented over the past 16 years including the preparatory period, and the priorities of MIs have been changed, and the importance of other programs (except for scholarship programs) such as joint research programs, mobility and networking programs, and UIL and other activities has increased even more. In order to understand these points well, assessing the effectiveness of each program is required. Therefore it is important to regularly organize and examine the information of the inputs and outputs of each program.

(8) Secure external resources

While some costs of the Project are already shared by MIs, at the terminal evaluation survey, many MIs pointed out that it was difficult to increase the costs. In order to enhance the sustainability of the Project, it is desirable to actively approach to ASEAN-related organizations, MOEs and the private sector and secure external resources.

(9) Promote collaboration with local JICA offices

Further collaboration with local JICA offices for the Project such as regular meetings would be helpful in order to enhance the synergistic effects of other JICA projects and improve project effects through the assistance to MIs and collaboration with MOEs.

3-7. Lessons Learned

Selection of excellent applicants through new screening methods

While securing excellent students is a critical issue for the Project, the interview survey with the supervisors of HIs shows that they sometimes found it difficult to supervise scholarship students due to their limited English proficiency and/or a lack of basic academic knowledge of engineering on the part of students. On the other hand, some MIs utilize Skype or YouTube to screen applicants in addition to paper screening, which turned out to be effective to select excellent students. Devising screening methods is useful in improving the quality of scholarship students.