

FY2017 Inter-University Exchange Project Hokkaido University

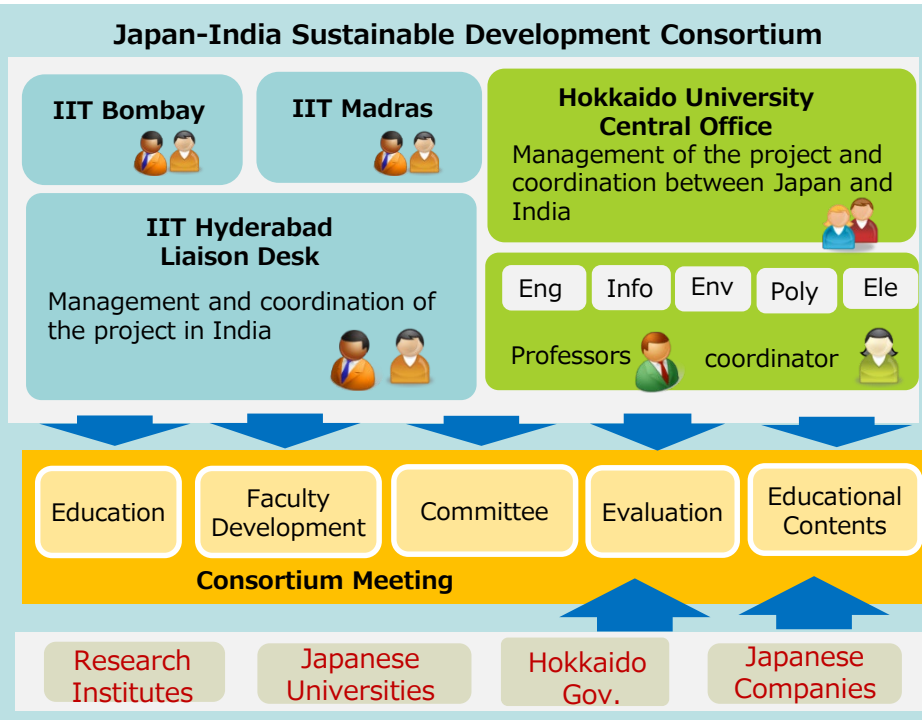
Support for the Formation of Collaborative Programs with Russian and Indian Universities

【Name of project】 (Adopted year: FY2017, (Type A (India)))

International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI)

【Summary of Project】

This project aims at contributing to the development of human resources capable of playing central roles in the promotion of teamwork research between Japan and India for Developing Sustainable Transportation System and Infrastructure. Students participating in this program will study basic subjects and the language and culture of Japan/India. They will then set specific research themes and experience team research in each other's countries, and work together to achieve certain results for the set theme in a team comprised of students from both countries. This project also aims at establishing the Japan-India Sustainable Development Consortium with companies which promotes a continuing exchange between Japan and India.



Hokkaido University

- Engineering** Transportation, Infrastructure
- Information** Network, Big Data
- Environment** Environment, Sanitation
- Public Policy** Policy for Development
- Electronics** Energy, Big Data

Student Exchange

- 80 Indian students
- 80 Japanese Students



【Summary of Exchange program】

Students study basic subjects of this program as well as the languages and cultures. Students set specific themes and experience team research in each other's countries, and acquire "teamwork-type research skills" in a team comprised of students from both countries. Students are also able to study subjects in their own fields under the credit-exchange agreement. The international committee works to improve the quality of education of this project.

【Global Human Resource on the project】

This project aims at contributing to the development of human resources capable of playing central roles in the promotion of teamwork research between Japan and India for Developing Sustainable Transportation System and Infrastructure. It is important to consider not only the positive effects of the development but also the negative effects on the environment. Participants in this projects discuss various issues arising from the development during the teamwork activity.

【Feature on the project】

This project aims at establishing the Japan-India Sustainable Development Consortium with companies which promotes a continuing exchange between Japan and India.

【Exchange number】

	2017	2018	2019	2020	2021
Outbound	5	15	18	21	21
Inbound	5	15	18	21	21

1. FY2017 Progress

【Name of project】(Adopted year: FY2017, (Type A, (India)))

International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI)

■ Exchange Programs



Students were dispatched and accepted for short-term internships at Hokkaido University and IIT Hyderabad and Madras from February to March, 2018. TV conference system were used so that students from both sides could participate in the preliminary basic course to learn program overview, information of each university, basic languages and culture of each other. Final presentation sessions at the end of internship were also held via TV conference system, and both side of supervisors could question and give comments to the students.

Call for FY2018 applications from IITs has been launched in February 2018, and 15 applicants are selected as planned. For HU students, recruitment information has been distributed by notices to participating schools, website, SNS and guidance.

(Final presentation by students after internship)

Student-Mobility

○ Outbound

5 students (3 students to IIT Hyderabad and 2 students to IIT Madras) were dispatched for from 2 weeks to 1 month.

○ Inbound

4 students (2 from both IIT Hyderabad and IIT Madras) were accepted for from 2 weeks to 1 month.

Inter-university agreements have been concluded with all three IITs including IIT Bombay, and it therefore made participating institutions possible to dispatch to /accept from any schools other than School of Engineering of Hokkaido University from FY2018.

	2017	
	Plan	Results
Outbound	5	5
Inbound	5	4

■ Forming the University Network with Quality Assurance

International Steering Committee Meeting were held in January, 2018. Program overview was shared, agreements on consortium and liaison desk were made. Issues such as mutual dispatch, acceptance of students, program curriculum and credit transfer were discussed, and further collaboration between participating universities were agreed.

Curriculum and syllabus of basic courses of the program were prepared both in Japanese and English. FDs by invited instructors were held so that faculties could learn basic language and culture of India and a precedented exchange program with India conducted by another university. What have been learnt became good input to the preparation of basic courses.

Approval of credits and certification of program completion will be strictly managed by the International Steering Committee. Feedbacks from students about each subject and curriculum will be accumulated and evaluated for future improvement of this program.



(International Steering Committee Meeting)

■ Promotion of Student-Mobility Environment

Central Office has been established with three staff members in November, 2017 in order to handle administrative operations of the program, and started to coordinate with liaison desks of IIT partner universities. Stakeholders of partner universities were invited for the International Steering Committee Meeting held in January, 2018, and accepting environment at both sides were confirmed to prepare for student internships from February, 2018. Faculty members of Hokkaido University have visited IIT partners during February and March, and further discussed dispatch and acceptance beyond FY2018.

Trial classes for basic language and culture of both countries were offered to the students prior to their internships from February. Pre-departure orientation was also held for Japanese students, and Indian students were provided with introductory Japanese language and culture class upon their arrival to Hokkaido University.

Course information for FY2018 was announced and distributed through application call, guidance as well as the program website.

■ Internationalization of the university, Information disclosure and Publication of outcome

Program website and accounts for Facebook, Twitter, and Instagram have been opened and program overview, news, recruitment information, etc. in both Japanese and English have been announced. Brochures and PR movies were created for promotion towards IIT partner universities and new students.

Articles about the kick-off events in January, 2018 have been provided to the PR magazine and Japanese and English website of Hokkaido University, and to Bunkyo News for further publication of the program.

Faculties have learnt about basic language and culture of India and precedented program in the FDs conducted by invited instructors. Education and Exchange Study Group Meeting will be held in FY2018 so that experiences can be shared with other programs for further improvement of educational quality.

■ Good Practices

Participating students have learned program overview, information of IIT universities, and basic languages and cultures of each other through trial classes prior to their internships. For IIT students, it should be noted that their motivations towards internship were dramatically increased and their communications have been highly activated after having taken introductory Japanese language and culture classes which were provided during their stay at Hokkaido University. The basic courses both of Japanese and Indian languages and cultures will be provided by the program as regular courses from FY2018, and it is expected that those courses will contribute to improve communication skills of both Japanese and Indian students.

2. FY2018 Progress

【Hokkaido University】

【Name of project】(Adopted year: FY2017, (Type A, India)

International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI)

■ Exchange Programs



〈Group discussion at “Introduction to STSI”〉

Student-Mobility

○ Outbound

13 students (5 students to IIT Hyderabad, 4 students to IIT Bombay and 4 students to IIT Madras) were dispatched for a 3 week- to 3 month-internship. In addition, 13 students were dispatched for a 1 week study tour.

○ Inbound

15 students (5 from each IIT) were accepted for from 3 weeks to 3 months. Graduate School of Environmental Science has accepted one student.

- STSI basic courses have been started from FY2018:

“Introduction to STSI”(2 credits): attended by 7 HU students and 15 IIT students

“Basic language and culture of India”(1 credit): attended by 32 HU students

“Basic language and culture of Japan”(1 credit): attended by 15 IIT students

- 13 HU students were dispatched and 15 IIT students were accepted for internship program with credits:

Internship(1-2credits)

Specialized subjects offered at the accepted university(2-12 credits)

- Certificates of completion were awarded to 7 HU students and 15 IIT students who have completed all the requirements of STSI Program.

- 13 HU students were dispatched for a study tour conducted in collaboration with IIT Madras to promote participation of Japanese students to the program.

- Call for FY2019 applications from IITs has been launched in November 2018, and 18 students are selected as planned. 18 HU students are planned to be dispatched.

	2018	
	Plan	Results
Outbound	15	26
Inbound	15	15

■ Forming the University Network with Quality Assurance

- TV conference system and e-Learning materials are utilized to flexibly accommodate academic calendar and arrival schedule of students. Feedbacks from students were accumulated for the improvement of the courses.
- Final presentations at the end of internship were reviewed by faculties of Japan and India via TV conference system, and learnings and achievements of students were recognized by both side.
- International Steering Committee Meeting was held in October, 2018. Progress of the program was shared, certification of completion was examined and approved, and the plan for next year was discussed and agreed.
- Educational Exchange Seminar was held in January, 2019. 22 participants, including faculty and staff from the University of Tokyo and JAIST, and personnel from 5 corporations interested in STSI Program, discussed educational exchanges between Japan and India, and human resource development.



〈Final presentation session on internship〉

■ Promotion of Student-Mobility Environment

- Central Office and liaison desks coordinated each other for various aspects related to student exchange: matching students with accepting supervisors, flight and accommodation arrangement, supporting visa applications, course registration, etc. Orientation and preliminary education for dispatching students were provided for their preparation. For accepting students, student supporters were arranged, and orientation and administrative support were given by Central Office. Student supporters and administrative support were provided likewise when Japanese students arrived at IITs.
- 3 HU faculties visited IIT Hyderabad and IIT Bombay in September and 6 IIT faculties visited HU, in order to discuss student exchanges in the future and introduced their research work with faculties in similar research area.
- Study tour was conducted in collaboration with IIT Madras in March, 2019. 13 students visited its laboratories, research park and Indian corporation, and their interests towards India and IIT were stimulated.

■ Internationalization of the university, Information disclosure and Publication of outcome

- Website (<http://labs.eng.hokudai.ac.jp/office/iao/stsi-en/>), SNS and news are actively updated both in Japanese and English.
- At Educational Exchange Seminar in January, 2019, learnings and issues were shared with participants from other universities and interested corporations. Final presentation session on internship was held on the same day so that participants learn achievements of students in detail. Articles on these events were posted to PR magazine of HU and website of Univ. Tokyo.
- Round-table talk was held after the final presentation session in March, with program students and participants from corporations. Experiences in India were shared and how to apply them in the future was discussed.
- Program Guide and leaflet were published in Japanese and English and distributed to students and corporations.
- IIT students who learned about HU through STSI Program has applied to the regular degree course of our graduate school, and STSI alumni HU student is applying for a longer exchange program as a next step.

■ Good Practices

- “Basic language and culture of India” and “Basic language and culture of Japan” were offered as regular subjects, and students learned culture of each other which helped them to adapt in the accepted environment smoothly. In “Introduction to STSI” with short PBL, communications between students were accelerated through actual collaboration realized in group-work and presentation, and it led to continuing support to each other outside of class.
- Educational Exchange Seminar and final presentation sessions stimulated discussions and had positive feedbacks from both academic and corporate participants, which resulted in establishment of the Japan-India Sustainable Development Consortium with several corporations.

3. FY2019 Progress

【Name of project】(Adopted year: FY2017, (Type A, India)

International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI)

■ Exchange Programs



〈Group discussion at “Introduction to STSI”〉

- STSI basic courses have been offered in FY2019:
 - “Introduction to STSI”(2 credits): attended by 15 HU students and 18 IIT students
 - “Basic language and culture of India”(1 credit): attended by 20 HU students
 - “Basic language and culture of Japan”(1 credit): attended by 18 IIT students
- 18 HU students were dispatched and 18 IIT students were accepted for internship program with credits:
 - Internship(2 credits)
 - Specialized subjects offered at the accepted university(2-6 credits)
- Certificates of completion were awarded to 11 HU students and 17 IIT students who have completed all the requirements of STSI Program.
- Call for FY2020 applications from IITs was launched in November 2019, and 22 students were selected. 21 HU students are planned to be dispatched. However, participation from India may be online and the dispatching students may be decreased due to the COVID-19 situation.

○ Outbound

18 students (8 students to IIT Hyderabad, 5 students to IIT Bombay and 5 students to IIT Madras) were dispatched for a 3 week- to 3 month-internship.

○ Inbound

18 students (6 from each IIT) were accepted for from 3 weeks to 4 months. Graduate School of Environmental Science has accepted one student.

	2019	
	Plan	Results
Outbound	18	18
Inbound	18	18

■ Forming the University Network with Quality Assurance

- TV conference system and e-Learning materials were utilized to flexibly accommodate academic calendar and arrival schedule of students. Those tools were useful for review and progress check of students learnings.
- Final presentations in English at the end of internship were reviewed by faculties of Japan and India as well as staffs from corporations participated in Japan-India Sustainable Development Consortium. Students presented and answered questions confidently, and educational effectiveness of this program has been recognized by the participants from Japan, India and corporations.
- International Steering Committee Meeting was held in October, 2019. Progress of the program was shared, rolls of participating universities and the future improvements were discussed.
- 11 HU students and 17 IIT students who earned enough credits have been conferred certificates of completion.
- External Evaluation Committee was held in February 2020, and the progress of the program was highly recognized and the advice were provided.



〈Final presentation session on internship〉

■ Promotion of Student-Mobility Environment

- Central Office and liaison desks continuously coordinated each other for program operation for student and faculty exchange, evaluation and certification, etc.
- 4 HU faculties in September 2019 and 3 in February 2020 visited IIT Hyderabad, IIT Bombay and IIT Madras. 6 IIT faculties visited HU in October 2019, and discussed further collaboration on student exchanges in the future.
- Both HU and IIT students could realize their own achievements through this program by pre and post internship self-evaluation and final presentation in front of faculties from Japan and India.
- An alumni completed this program in 2019 will enter doctoral degree course (English Engineering Program), Graduate School of Engineering, Hokkaido University in FY2020.

■ Internationalization of the university, Information disclosure and Publication of outcome



〈Round-table talk〉

- Overviews, objectives and progress of this program are continuously updated on our website (<https://eprogram.eng.hokudai.ac.jp/office/iao/stsi/>), leaflet, SNS and symposiums, both in Japanese and English, stimulating participation to STSI consortium to the companies and organizations interested in collaboration with India.
- 9 sessions of final presentation were held in 2019 and 11 participants attended from interested corporations.
- Round-table talk was held after the final presentation session in December 2019, with program students and participants from corporations. With these activities, 6 new companies joined Japan-India Sustainable Development Consortium in FY2019.

■ Good Practices

- The program has contributed to the carrier path of program alumni: an alumni of this program was selected as a MEXT scholarship student to the doctoral degree course, Graduate School of Engineering, Hokkaido University, and others found jobs in the area related to “Sustainable Transportation System and Infrastructure”.

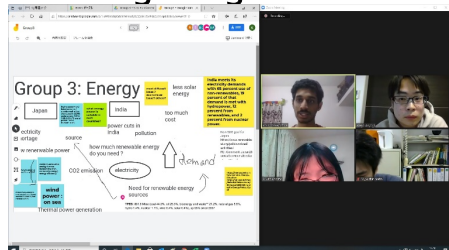
4. FY2020 Progress

【Hokkaido University】

【Name of project】(Adopted year: FY2017, (Type A, India)

International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI)

Exchange Programs



〈Group discussion at “Introduction to STSI”〉

Student-Mobility

○ Outbound

4 students took online basic course including group work with IIT students. 1 student was dispatched for a 1 month-online-internship with IIT Bombay professor.

○ Inbound

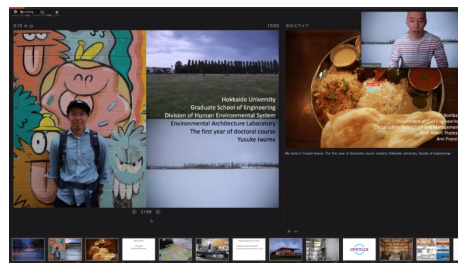
9 students (3 from each IIT) were accepted as Special Audit Student and earned credits for online basic courses.

- STSI basic courses have been offered online in FY2020 due to COVID-19 pandemic:
 - “Introduction to STSI”(2 credits): attended by 4 HU students and 8 IIT students
 - “Basic language and culture of India”(1 credit): attended by 6 HU students
 - “Basic language and culture of Japan”(1 credit): attended by 9 IIT students
- 1 HU student was accepted for online internship program with credits: Internship(2 credits)
- Certificates of completion were awarded to 1 HU student who have completed all the requirements of STSI Program.
- Call for FY2021 applications from IITs was launched in November 2020, and 17 students were selected. With continuing COVID-19 pandemic, basic courses will be offered online, and internship will be either online or postponed. 11 HU students are taking basic courses, and 3 will be dispatched for online internship.

	2020	
	Plan	Results
Outbound	21	5
Inbound	21	9

Forming the University Network with Quality Assurance

- All STSI basic courses are offered utilizing online meeting application and e-Learning materials to flexibly accommodate students’ environment in COVID-19 situation and enabled students to earn credits online.
- Japanese and Indian students worked together in online group work successfully, and it was confirmed that online can be good option in the future.
- Final presentations in English at the end of online internship were reviewed by faculties of Japan and India as well as staffs from corporations participated in Japan-India Sustainable Development Consortium. Students presented and answered questions confidently, and even with travel restriction, educational effectiveness of this program has been recognized by the participants from Japan, India and corporations.
- International Steering Committee Meeting was held in March, 2021. Progress of the program and current situation in participating universities under COVID-19 pandemic were shared, and the future improvements were discussed.
- 1 HU student has been conferred certificates of completion.



〈Final presentation session on online internship〉

Promotion of Student-Mobility Environment

- Central Office and liaison desks coordinated each other for program operation for student exchange, evaluation and certification, etc. even in COVID-19 situation.
- Virtual environment for co-learning and e-learning was provided for both Japanese and Indian students.
- 6 HU and 13 IIT students, and 9 faculties participated in Online Student Gathering held prior to the co-learning basic course. It was a great opportunity for students to get to know each other and activated group work later.



〈Online Student Gathering〉

Internationalization of the university, Information disclosure and Publication of outcome



〈Educational Exchange Seminar〉

- Overviews, objectives and progress of this program are continuously updated on our website (<https://eprogram.eng.hokudai.ac.jp/office/iao/stsi-en/>), leaflet, SNS and symposiums, both in Japanese and English.
- 2 sessions of final presentation were held in 2020 and 12 participants attended from interested corporations.
- FD was held with special lecturer, and 40 participants including staffs from 7 universities had learned about Risk management in dispatching abroad.
- Educational Exchange Seminar was held, and HU and 3 universities conducting program with India shared activities in current situation. 29 participants from universities and corporations exchanged opinions actively.

Good Practices

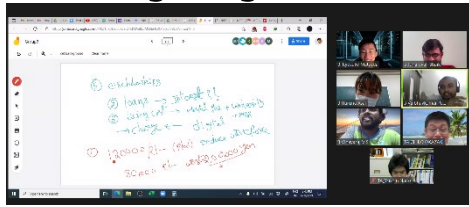
- The program continuously contributed to the carrier path of program alumni who found jobs in the area related to “Sustainable Transportation System and Infrastructure”, including a consortium partner, a company doing development consulting in India and Ministry of Environment.

5. FY2021 Progress

【Name of project】(Adopted year: FY2017, (Type A, India)

International Research Skills Program for Developing Sustainable Transportation System and Infrastructure (STSI)

Exchange Programs



〈Group discussion at “Introduction to STSI”〉

- STSI basic courses have been offered online in FY2021 due to COVID-19 pandemic:
 - “Introduction to STSI”(2 credits): attended by 5 HU students and 10 IIT students
 - “Basic language and culture of India”(1 credit): attended by 6 HU students
 - “Basic language and culture of Japan”(1 credit): attended by 10 IIT students
- 3 HU students and 8 IIT students were accepted by the partner university for online internship program with credits:
 - Internship(2 credits)
- Certificates of completion were awarded to 3 HU students and 8 IIT students who have completed all the requirements of STSI Program.
- Call for FY2022 applications from IITs was launched in December 2021, and 9 students were selected. 7 HU students are planned to be dispatched.

Student-Mobility

○ Outbound

3 students (1 student to IIT Hyderabad, 2 students to IIT Bombay) were accepted for 2 to 4 month-online internship. 5 students took online basic course including group work with IIT students.

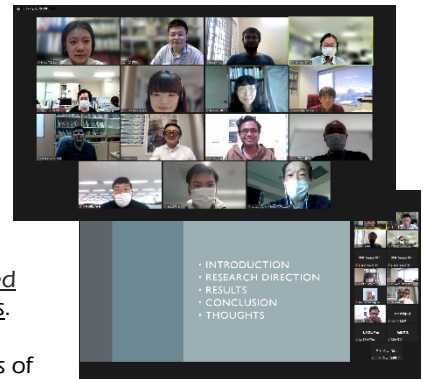
○ Inbound

8 students (3 from IIT Hyderabad, 2 from IIT Bombay, 3 from IIT Madras) were accepted for one to two month-online internship. 10 students earned credits for online basic courses.

	2021	
	Plan	Results
Outbound	21	6
Inbound	21	14

Forming the University Network with Quality Assurance

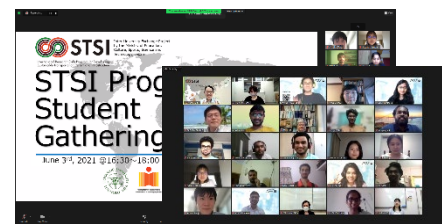
- All STSI basic courses are offered utilizing online meeting application and e-Learning materials to flexibly accommodate students’ environment in COVID-19 situation and enabled students to earn credits online.
- Final presentation in English at the end of online internship were reviewed by faculties of Japan and India as well as staffs from corporations participated in Japan-India Sustainable Development Consortium. Students presented and answered questions confidently, and even with travel restriction, educational effectiveness of this program has been recognized by the participants from Japan, India and corporations.
- International Steering Committee Meeting was held online in February 2022. Achievements for 5 years and things to be improved were discussed and It was confirmed that the project will continue as integrating with other Inter-University Exchange projects.
- Certificate of Completion was awarded for 3 HU students and 8 IIT students.
- External evaluation committee meeting was held in November 2021, where the progress of the program was highly recognized, and some ideas were raised for future program improvements, including the creation of a database of alumni roster.



〈Final presentation session on online internship〉

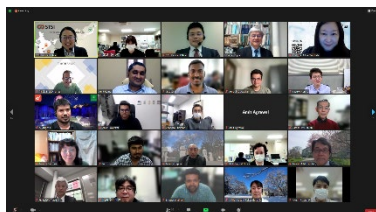
Promotion of Student-Mobility Environment

- Central Office and liaison desks continuously coordinated closely each other for program operation from student recruitment to certification.
- Virtual environment for co-learning and e-Learning was provided for both Japanese and Indian students.
- 5 HU students, 15 IIT students, 8 from faculties and 10 from consortium corporations participated in Online Student Gathering held prior to the co-learning basic courses. It was a great opportunity for students to get to know each other and activated group work later.



〈Online Student Gathering〉

Internationalization of the university, Information disclosure and Publication of outcome



〈Summary Symposium〉

- Overviews, objectives and progress of this program are continuously updated on our website(<https://stsi.oia.hokudai.ac.jp/en/>), leaflet, SNS and symposiums, both in Japanese and English.
- 7 sessions of final presentation by 11 students were held in 2021 and a total of 88 participants attended including 38 participants from consortium corporations.
- FD was held in November 2021 and 40 participants including staffs from 9 universities had learned about international exchange under the pandemic.
- Summary Symposium was held in March 2022. 46 audiences including students/faculties from HU, IITs, and other universities and consortium companies participated. 5 years’ achievements were shared.

Good Practices

- By November 2021, 13 companies had expressed their participation in the Japan-India Sustainable Development Consortium, and a total of 50 people from 36 companies participated in the student presentation sessions where active exchanges of opinions with students took place and collaboration was promoted.
- The program integrated with other ongoing Inter-University Exchange projects (PARE&RJE3) and developed as “Global University Collaborative Interaction for Sustainable Society (One program for Global Goals, called as OGGs)” from FY2022.