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*AIT wishes to thank its faculty, staff, students and the many people who rendered their assistance in preparing the AIT Sustainability Report 2022. The report was edited by Dr. Paul Bruthiaux (External Editor) and designed by Ms. Jennifer Pangilinan, Coordinator, AIT Entrepreneurship Center, graphic designer Ms. Pitiruedee Angkhananuchat, and the team.*


**The AIT Sustainability Report is disseminated in digital format only, following our #GreenInitiative and commitment to environmental considerations. #PaperlessAIT**





THIS REPORT IS CATEGORIZED UNDER THE FOLLOWING:

 RESEARCH

 OUTREACH

 OPERATIONS

 PROJECT

 TEACHING

 PUBLIC ENGAGEMENT

 FIELD SURVEY



# ABOUT THIS REPORT

The Sustainable Development Goals (SDGs) or Global Goals are a set of 17 interconnected global goals that serve as a blueprint for achieving a better and more sustainable future for all. They cover a wide range of areas related to human and planetary well-being and, if achieved, will contribute to a stable and prosperous life for everyone while preserving the health of the planet.

Reaching the 2030 Agenda and the SDGs presents both challenges and opportunities. People worldwide have faced significant hardships and suffering, and the COVID-19 pandemic has compelled us to reevaluate our way of life, underscoring the importance of addressing the SDGs.

As a leading academic institution in Asia dedicated to sustainability, AIT has been collaborating with partners for over six decades to contribute its expertise to the region's sustainable development. Through its five thematic areas - Climate Change, Smart Communities, Food-Energy-Water, Infrastructure, and Technology, Policy, and Society - AIT focuses on learning and research strategies that aim to reduce poverty, mitigate risks, conserve resources, and create green job opportunities by fostering sustainable livelihoods in Asia.

This report provides a summary of AIT's activities in 2022, encompassing teaching, research, outreach, public engagement, and operations, in alignment with the SDGs. While this report highlights some initiatives, AIT undertakes a diverse range of activities across the Institute. AIT strives to provide solutions and recommendations for issues such as climate change, water and food insecurity, air and plastic pollution, biodegradation, biodiversity loss, and many others. The Institute's commitment to sustainable development and positive social impact is evident in its participation in the Times Higher Education (THE) Impact Rankings, where it consistently ranks as a frontrunner in the region.

AIT aspires to lead by example in practicing and promoting sustainability. It has initiated the Botanical Garden Campus Towards Net Zero, building upon previous campus plans, with the goal of transforming the entire AIT into a fully-fledged botanical garden and achieving net-zero emissions by 2030. This campus plan aligns with the direction of the Bio-Circular Green (BCG) Economy in Thailand and the Asia-Pacific region, integrating various ecosystems and biodiversity in the midst of a highly urbanized setting to foster harmonization between nature and humans.

I extend my gratitude to the editorial team for their collaboration with AIT Schools and Centers in highlighting important work in this regard.

**Professor Kazuo Yamamoto**  
**President**  
**Asian Institute of Technology (AIT)**



## AIT BOTANICAL GARDEN CAMPUS TOWARDS NET ZERO BY 2030

Climate change is widely recognized as the most significant threat to our planet and its inhabitants. The escalating global temperatures disrupt the delicate balance of nature, posing numerous risks to all life forms on Earth. The IPCC AR6 2022 synthesis report on Impacts, adaptation, and vulnerability highlights the existing challenges of climate-resilient development under current levels of global warming. These challenges will be further compounded if temperatures exceed 1.5 degrees Celsius and may become insurmountable beyond 2 degrees Celsius. The report also emphasizes the availability of emission reduction options in every sector that can halve emissions by 2030.

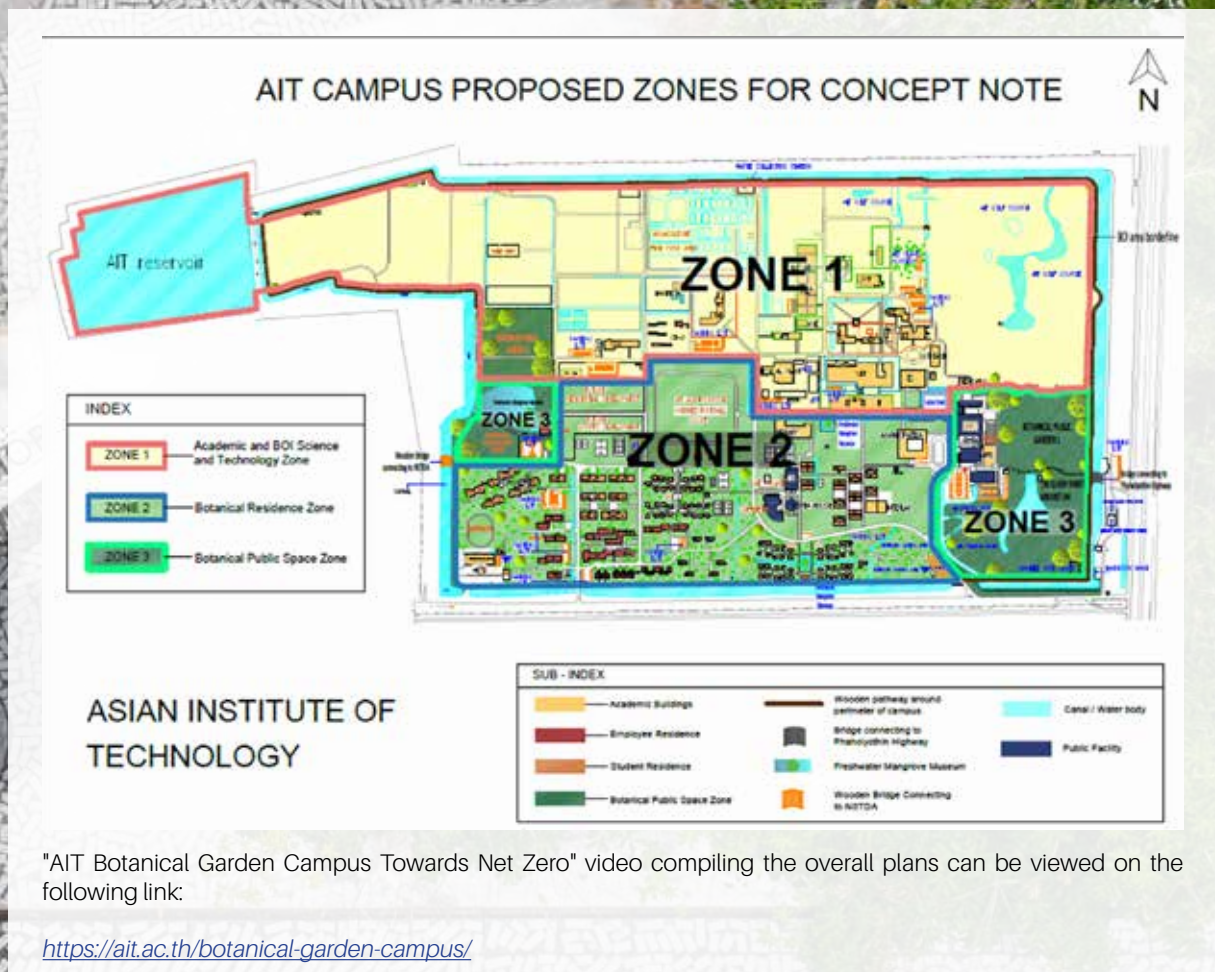
Experts widely agree that the rising temperatures directly contribute to the loss of biodiversity and degradation of ecosystems. Therefore, addressing climate change and biodiversity loss must be pursued together as interconnected existential threats. AIT is committed to leading by example in the practice and promotion of sustainability. The AIT campus is renowned for its lush greenery and diverse biodiversity, harmoniously coexisting with academic activities. To achieve true sustainability, AIT plans to establish a comprehensive botanical garden, building upon previous initiatives. This transformative endeavor aims to make the entire AIT campus a fully-fledged botanical garden with the ambitious target of achieving Net Zero emissions by 2030.

The Botanical Garden Campus Towards Net Zero will integrate and harmonize AIT's natural assets into

a comprehensive plan aligned with the Bio-Circular Green (BCG) Economy principles, in line with Thailand and the Asia-Pacific region's direction. By incorporating various ecosystems and biodiversity, the campus will provide a space where nature and human activities can coexist harmoniously, even in one of Asia's most urbanized settings.

AIT's sustainability vision for the Botanical Garden Campus is guided by three key principles: connection to The Queen Sirikit Arboretum, striking a balance between academia and industry, and open access to the public. The 130-hectare campus will encompass three specialized zones: the Academic and BOI Science and Technology Zone, the Botanical Residence Zone, and the Botanical Public Space Zone. These zones will synergize sustainable activities throughout the campus, contributing to its carbon-neutral status.

By leveraging its abundant natural biodiversity and historical role as an international hub for technology and sustainability in higher education, the Botanical Garden Campus Towards Net Zero is AIT's response to the urgent climate and biodiversity challenges of our time. The campus aims to attract educators, researchers, public and private sector partnerships, social enterprises, start-ups, responsible investments, carbon credits, as well as top-class students and researchers. It aspires to become a leading example of a sustainable academic institution where individuals can live, study, and work in a carbon-free environment in the 21st century.



# AIT'S PARTICIPATION IN THE IMPACT RANKINGS 2022

AIT maintains its position as a leader in addressing sustainable development and social impact in the region by meeting the UN's Sustainable Development Goals (SDGs). Despite the increasing

number of competing universities from 1,107 in the previous year, AIT maintained its overall rank of 101-200 out of 1,406 universities from 106 countries/regions.



AIT participated in 13 of them and ranked in the Top 100 in 4 and 101-200 in 6. Out of all participating universities, AIT is placed in the Top Worldwide band in 9 SDGs this year, up from 6 last year.

AIT's overall score has gone up to 82.5 this year, ascribed to its increased collaborations with governments, NGOs, and international organizations, impactful research projects, policies to support its diverse community, and its Sustainability Report.

**AIT'S EFFORTS ON SUSTAINABILITY RESULTED IN SEVERAL TOP RANKINGS:**



**SDG1: No Poverty - Rank 43**



**SDG2: Zero Hunger - Rank 86**



**SDG10: Reduced Inequalities - Rank 68 (Top in Thailand)**



**SDG16: Peace, Justice and Strong Institutions - Rank 72 (Top in Thailand)**



## END POVERTY IN ALL ITS FORMS EVERYWHERE

In 2022, AIT worked toward the achievement of SDG1 by engaging in activities designed to raise the incomes of organic rice and tapioca farmers in Thailand, promote the adoption of modern technologies such as solar irrigation, introducing monitoring and evaluation tools, and disseminating knowledge regarding climate-

smart agricultural practices in Thailand and elsewhere in SE Asia. Other projects involved adaptation strategies designed to minimize the impact of climate change and to deal effectively with the maintenance and protection of river flows in farming areas in Bangladesh and India.



### SCOPING STUDY ON COLLECTIVE ACTION BY ORGANIC JASMINE RICE PRODUCER GROUPS IN NORTHEASTERN THAILAND



*Duration: 2022-2025*

#### Description of activities in 2022:

A field visit was conducted in July 2022 in Roi Et Province by researchers from AIT, Chulalongkorn University, the Japan External Trade Organization (JETRO), and Kobe University under JETRO funding with help from the Ministry of Agriculture and Cooperatives. Key informant

interviews were conducted with farmer groups with export-standard and Thai-standard organic certificates as well as the Rice Department. The findings informed the formal kick-off field visit in January 2023.





## THAI TAPIOCA STARCH PROJECT



Duration: December 2019 to June 2023 (extended)

### Description of activities in 2022:

During 2022, there was significant improvement in the statistical analysis of the data from the Department of Business Development (DBD), Ministry of Commerce, in collaboration with researchers from the Japan External Trade Organization (JETRO) and Kobe University.

Weblink

<https://dds.ait.ac.th/sdgs/2019/08/02/investigating-the-miraculous-growth-of-the-thai-cassava-processing-industry/>



## TECHNOLOGY CLINIC FOR SMALL- AND MEDIUM-SIZED AGRO ENTERPRISES IN THAILAND



Duration: 2019 to 2022

### Description of activities in 2022:

During 2022, the final workshop was organized from 8 to 10 June at the RBB Auditorium, AITCC. Five AIT faculty members as well as several support staff members attended the workshop. The materials were selected based on the fieldwork conducted in 2020-2022. The project has been completed.

Weblink:

<https://dds.ait.ac.th/sdgs/2019/08/02/delivery-of-training-program-for-technology-clinic-for-small-and-medium-sized-enterprises-smes-in-thailand/>





## UKRI GCRF TRADE HUB



*Duration: 2019 to 2022*

### Description of activities in 2022:

The project involves development partners in Indonesia, China, Tanzania, Brazil, the Democratic Republic of the Congo, the Republic of Congo, Gabon, Cameroon, and the UK. During 2022, AIT conducted a series of follow-up activities on MEL (monitoring, evaluation, and learning) with counterpart experts in the UK. Publications were produced on various research themes, including the impacts of COVID-19 non-pharmaceutical policy

interventions on international trade flows using panel data analysis and the vector autoregression approach. AIT's engagement concluded in December 2022.

Weblink for the Project:

<https://dds.ait.ac.th/sdgs/2019/08/02/trade-hub/>

<https://tradehub.earth/>



## COLLABORATIVE ADAPTATION PATHWAYS FOR WATER MANAGEMENT IN AGRICULTURE IN BHAVANI RIVER BASIN, TAMIL NADU, INDIA



*Duration: 2021-2022*

### Description of activities in 2022:

The aim of the project is to use bottom-up approaches to recommend adaptation strategies that will help manage the risks due to climate change in the agricultural sector of Bhavani River basin in Tamil Nadu. The project employs the CRIDA (Climate Risk Informed Decision Analysis) approach to identify the breaking point of the agricultural system (when the system fails), the magnitude of climate

change that will cause the system to cross the threshold, and the plausibility of reaching that state in the future. Several adaptation options were evaluated to address the range of plausible future climate scenarios. The project aims to develop a set of adaptation pathways that will inform the policymakers on when to act.



*Irrigation infrastructure (Weir) at Kalingarayan near the outlet of Bhavani river basin.*



*Measurement of flow the near Kodiveri in the Bhawani river basin.*



## CLIMATE CHANGE ADAPTATION IN AGRICULTURE FOR ENHANCED RECOVERY AND SUSTAINABILITY OF HIGHLANDS: CLIMATE-SMART AGRICULTURE CONSULTING FIRM (ADB-JFPR)



Duration: December 2020 to December 2023

### Description of activities in 2022:

The Climate Change Adaptation in Agriculture for Enhanced Recovery and Sustainability of Highlands project, led by a climate-smart agriculture consortium at AIT and funded by the Asian Development Bank's Japan Fund for Prosperous and Resilient Asia and the Pacific (ADB-JFPR), focuses on addressing climate change challenges in highland agriculture in northern Thailand. In 2022, workshops were organized in Nan Province, bringing together stakeholders, including government officials and smallholder farmers. The workshops aimed to enhance knowledge, capacity, and collaboration, promoting climate-smart agricultural practices suitable for highland ecosystems such as solar irrigation, biochar, and keyline plowing. Topics covered included climate

change impacts, adaptation measures, resilient crops, water management, soil conservation, product quality, and output markets.

Weblink for the project abstract.

🌐 <https://www.adb.org/projects/53099-001/main>

Others: Web posts on the seminar organized during 2022

🌐 <http://www.ccaa.ait.ac.th/>

🌐 <http://www.ccaa.ait.ac.th/adb-ta-9993-progress-shared-at-the-apec-ppfs-webinar-2022-in-bangkok-thailand/>





## END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

In 2022, AIT's work to promote SGD2 included offering a Food Innovation, Nutrition, and Health Program, which offers professional and research degrees enabling graduates from diverse backgrounds and nationalities to transfer holistic knowledge in food science, innovation, and nutrition for a healthier and sustainable society in their

own country. Other contributions included a collaboration between Asian and European academic institutions, with the goal of developing specialists in the food industry and promoting research, entrepreneurship, risk management, livestock insurance, disease control, and innovation.



### FOODI ERASMUS+ PROJECT LAUNCHES FOOD INNOVATION, NUTRITION, AND HEALTH (FINH) ACADEMIC PROGRAM AT AIT



*Duration:*

#### **Description of activities in 2022:**

The Asian Institute of Technology (AIT) has launched the Food Innovation, Nutrition, and Health (FINH) Program under the School of Environment, Resources, and Development (SERD) after receiving endorsement in August 2020. This comprehensive program offers various degrees, including MSc, PhD, MPhil, and Professional Masters to provide holistic knowledge in food science, innovation, and nutrition for a healthier and sustainable society. In its first year, the program received over 150 applications from diverse backgrounds and nationalities, enrolling twelve post-graduate students. The FINH program was developed within the framework of the Erasmus+ Capacity Building- Food Processing and Innovation (FOODI) project, co-funded by the European Union. Prof. Anil Kumar Anal serves as the Principal Investigator (PI) for the project, which involves a consortium of 16 Higher Education Institutes (HEIs).

The program aims to address societal challenges by nurturing innovation in sustainable food processing and nutrition. It focuses on unraveling the food-health nexus and developing higher-level thinking skills in students to enable them to understand the multidimensional nature

of food safety, food security, and nutrition challenges. Graduates will acquire knowledge and competencies in areas such as innovative food product development, policy analysis and implementation, product design and management, and impact assessment. They will be well-equipped to work in various sectors, including research and development, product innovation, public health, regulatory agencies, and the food industry, bringing a nutrition perspective to their work.

The FOODI project, initiated with support from the European Union and ERASMUS+, aims to enhance social and economic growth by integrating innovation management and food processing. It involves collaboration between Asian and EU academic institutions with the goal of developing specialists in the food industry and promoting research and innovation. The project encompasses 16 organizations from EU and Asian countries and aims to support students at local, regional, and national levels through internship programs and academic expertise. The project emphasizes mastering innovation and a disruptive approach to success, fostering creativity, professional



development, and an entrepreneurial mindset in students. The establishment of FOODI centers aims to facilitate research and collaboration within the global academic community, benefiting researchers, stakeholders, experts, and the food industry at large.

Weblink:

🌐 <https://ait.ac.th/2021/10/foodi-erasmus-project-launches-food-innovation-nutrition-and-health-financial-academic-program-at-ait>



## FOODI INFO DAY



Duration: 2019 to 2022

### Description of activities in 2022:

In 2022, a series of workshops was conducted in partner sites in Asia and Europe funded by Erasmus+ of the EU. In particular, the FOODI Info Day Expert Workshop "Smart and Innovative Processing towards a Safe and Sustainable Food System" was organized by AIT at Novotel, Rangsit from 29 June to 1 July.

Weblink:

🌐 <https://www.foodi-project.eu>





## INTERNATIONAL TRAINING AND EXPOSURE VISIT PROGRAM ON "AGRICULTURAL AND LIVESTOCK RISK MITIGATION PRODUCTS"



Duration: 17 – 23 October 2022

### Description of activities in 2022:

The international training and exposure visit program "Agricultural and Livestock Risk Mitigation Products (emphasis Insurance Products)" was designed in response to a request from the Palli Karma-Sahayak Foundation (PKSF), an apex development organization and a financial institution (established by the Government) operating in Bangladesh. This professional training program expanded participants' knowledge of risk management and mitigation (weather, climate related and other risks) in agricultural and livestock sectors with an emphasis on insurance products. They were exposed to experiences and information on a number of new tools, insurance instruments, and existing as well as newly devised policies and regulations for mitigating risks facing the agriculture

and livestock sectors. The key content of this program covered: (i) Risks in Agriculture and Livestock Sectors; (ii) Managing risks through ex-ante and ex-post strategies; (iii) Key Conditions for Agriculture and Livestock Insurance; (iv) Application of Technology in Agriculture and Livestock Insurance; (v) Innovations in Agriculture and Livestock Insurance; and (vi) Case Studies on Mitigating Agriculture and Livestock Risks through Insurance. The program was designed and implemented by the AIT Extension of Asian Institute of Technology (AIT), Thailand.

Weblink:

<https://sites.google.com/view/agricultureandlivestockriskmit/home>





## REGIONAL WORKSHOP ON THE ASIAN IRRIGATION GOVERNANCE AND MANAGEMENT NETWORK ON "RESILIENT COMMUNITY IRRIGATION MANAGEMENT IN THE CONTEXT OF CLIMATE CHANGE AND MULTIFUNCTIONAL RURAL-URBAN WATER USE COMPETITION IN ASIA"



Duration: 2022

### Description of activities in 2022:

The 3<sup>rd</sup> Ostrom Center Workshop was jointly hosted by the OCeAN of the Asian Institute of Technology and the Centre for Civil Society and Governance of the University of Hong Kong from 24 to 27 June 2022. The workshop was organized from 24 to 25 June at the Milton E. Bender Auditorium, AIT. A field visit to Chiang Mai was organized from 26 to 27 June by Chiang Mai University. The field visit was conducted to have direct interactions with farmers and experience the irrigation system adopted from NIIS.

Weblink:

<https://drive.google.com/file/d/1MdWLacxuQWB4clfDyG7-ljP5anwwwKVm/view?usp=sharing>



## OPERATIONS – CLIMATE CHANGE ADAPTATION IN AGRICULTURE FOR ENHANCED RECOVERY AND SUSTAINABILITY OF HIGHLANDS (ADB-JFPR)



Duration: January 2021–September 2023

### Description of activities in 2022:

The Technical Assistance (TA) team visited the project site in Nan province several times to conduct project activities as listed below:

1. Demonstration of mobile-based product traceability technology
2. Capacity building on climate change vulnerability assessment in Highlands
3. Capacity building on gender-conscious climate-smart agriculture in Highlands

Weblink:

<https://www.adb.org/projects/53099-001/main>  
<http://www.ccaa.ait.ac.th>  
<http://www.ccaa.ait.ac.th/adb-ta-9993-progress-shared-at-the-apec-ppfs-webinar-2022-in-bangkok-thailand>



Capacity building event on gender-conscious climate-smart agriculture in Highlands



Capacity building event on climate change vulnerability assessment in Highlands



Field visit in Nan province for demonstration of digital agriculture



## INTERNATIONAL SYMPOSIUM ON INNOVATIVE TECHNOLOGIES FOR THE SUSTAINABLE AQUACULTURE VALUE CHAIN IN ASIA



*Duration: 31 May 2022 / Zoom Conference Platform*

### Description of activities in 2022:

The symposium is on innovative technologies for the sustainable aquaculture value chain in Asia. It highlights the importance of sustainable practices in the aquaculture industry and showcases cutting-edge technologies that contribute to environmental sustainability, social responsibility, and economic viability. The website offers insights into various aspects of the aquaculture value chain such as broodstock management, hatchery operations, feed production, disease control, and waste management. It aims to promote knowledge sharing, collaboration, and the adoption of innovative solutions to support the growth and sustainability of aquaculture in Asia.

Prominent aquaculture leaders from Asia-Pacific region presented the emerging aquaculture technologies and good practices to benefit smallholder farmers and enterprises worldwide.

Network for the Development of Agricultural Cooperatives in Asia and the Pacific (NEDAC), Anhui Academy of Agricultural Sciences (AHAAS), China and Asian Institute of Technology (AIT), Thailand, jointly organized the International Symposium on Innovative Technologies for the Sustainable Aquaculture Value Chain in Asia on Tuesday 31 May 2022 at 2 PM Bangkok Time (GMT+7) via Zoom Conference platform, which was live-streamed on the NEDAC YouTube Channel.

The Symposium aimed to highlight existing technologies and good practices of resource-efficient aquaculture to benefit smallholder farmers and cooperative enterprises in the Asia-Pacific region while developing collaborative networks among various stakeholder groups in sustainable aquaculture. The Symposium was attended by over 100 registered participants from 20 countries around the world including Bangladesh,



Belgium, Cambodia, Canada, China, Czech Republic, Egypt, Ghana, India, Indonesia, South Korea, Myanmar, Pakistan, Philippines, Singapore, Thailand, Turkey, Uganda, UAE, United Kingdom, and Vietnam.

"The Symposium provides a good communication platform for aquaculture experts to exchange aquaculture technologies/achievements. so I hope that we can cooperate to promote healthy development of the export industries in the region" said Mr. Li Zefu, Vice President of AHAAS, China during his welcome speech.



## ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

In 2022, AIT contributed to SDG3 by offering a training course in disease control in livestock and a training program designed to transfer knowledge and skills to individuals and government institutions with a view to managing and leading positive change in healthy lifestyles, solving health-related problems, delivering

quality health services, and improving performance by primary healthcare providers in Bangladesh. Other contributions concerned air quality management and emissions reduction in Asian countries, increased public understanding of acid deposition, and dealing with heat stress in India,



### PROFESSIONAL TRAINING COURSE ON "EPIDEMIOLOGICAL INVESTIGATION OF IMPORTANT ZONOTIC DISEASES (LIVESTOCK SECTOR)"



Duration: 18-27 April 2022

#### Description of activities in 2022:

The professional training course "Epidemiological Investigation of Important Zoonotic Diseases (Livestock Sector)" was organized for the participants from the Department of Livestock Services (DLS) under the Ministry of Fisheries and Livestock (MoFL), Government of Bangladesh. The program had an intensive learning pathway of exchanging knowledge and experiences in technical input sessions delivered by academicians and professionals. There were also field and study visits to relevant organizations, academic institutes, and laboratories. This professional training course provided participants with improved knowledge on scientifically rational and advisable control measures for preventing additional outbreak-associated morbidity or mortality in the livestock sector. The course was implemented by the AIT Extension of Asian Institute of Technology (AIT), Thailand.

Weblink:

<https://extension.ait.ac.th/news/epidemiological-investigation-important-zoonotic-diseases-0>





## PROFESSIONAL TRAINING COURSE ON "SUSTAINABLE HEALTH SYSTEMS IN A RAPIDLY CHANGING ENVIRONMENT"



Duration: 18-24 April 2022

### Description:

This training program was designed for transferring knowledge and skills to individuals and government institutions and enabling them to manage and lead positive changes, solving problems, delivering good services, and improving performance of the professionals involved in the public utility managers to benefit the operation of the Urban Primary Health Care Services Project (UPHCP-II), especially during the COVID-19 pandemic. The proposal was financed by the Asian Development Bank (ADB) & the World Health Organization (WHO). It was prepared for Urban Primary

Health Care Project (UPHCP-II), Bangladesh as one of the courses according to the Contract of Services between the Local Government Division of the Ministry of Local Government, Bangladesh and AIT Extension for delivering customized professional development courses in the health sector.

Web link:

<https://extension.ait.ac.th/news/professional-development-course-sustainable-health-systems-rapidly-changing-environment-0>



## TALK ON "HEAT STRESS, EXACERBATING HEALTH RISKS IN INDIA: RETHINKING APPROACH TO HEALTH SERVICE PROVISION"



Duration: July 26-28, 2022

### Description of activities in 2022:

The center director Prof Joyashree Roy delivered talk on "Heat stress, Exacerbating Health Risks in India: Rethinking Approach to Health Service Provision", Organised by National Institute of Disaster Management, Ministry of Home Affairs, Govt. of India, CECCSD, IMPRI, India





## PUBLICATION OF THE WORKSHOP REPORT ON THE "CAPACITY DEVELOPMENT PROGRAMME ON AIR QUALITY MANAGEMENT AND EMISSION REDUCTION OF PM<sub>2.5</sub> FOR ASIAN COUNTRIES"



Duration: March 2022

### Description of activities in 2022:

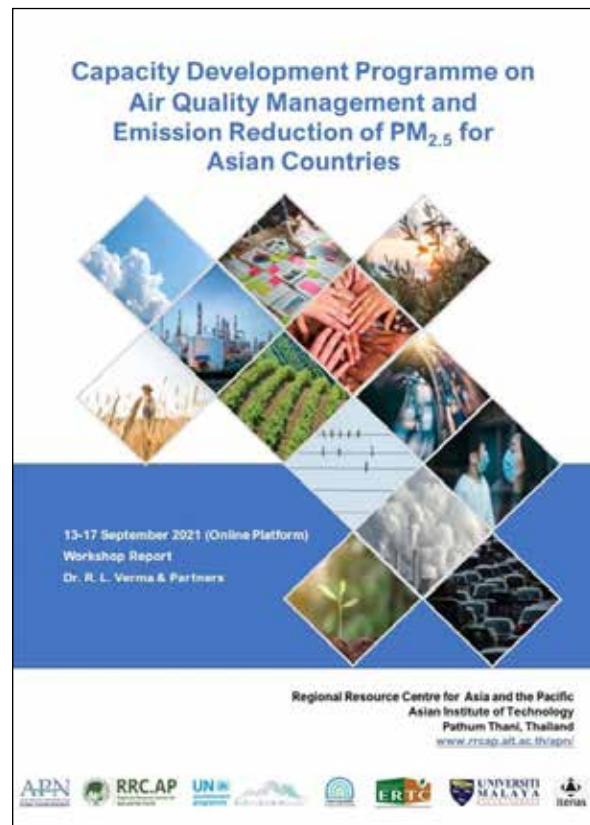
The AIT RRC.AP had published the Workshop Report of the "Capacity Development Programme on Air Quality Management and Emission Reduction of PM<sub>2.5</sub> for Asian Countries".

The report can be downloaded from AIT RRC.AP website (<http://www.rrcap.ait.ac.th/Pages/Publication.aspx>).

The report also published by the Asia-Pacific Network for Global Change Research (APN) on their website (<https://www.apngcr.org/publication/capacity-development-programme-on-airquality-management-and-emission-reduction-of-pm2-5-for-asiancountries/>) as the project was funded by the APN. The programme mainly aimed to build the capacities of the ASEAN member countries on air quality management and emission reduction of PM<sub>2.5</sub>. This e-publication is a compilation of the session outcomes of the capacity building workshop that was held from 13-17 September 2021 organized by the AIT RRC.AP.

Weblink:

- 🌐 <http://www.rrcap.ait.ac.th/Pages/Publication.aspx>
- 🌐 <https://www.apn-gcr.org/publication/capacity-development-programme-on-airquality-management-and-emission-reduction-of-pm2-5-for-asian-countries/>



## AWARENESS WORKSHOP ON STATE OF ACID DEPOSITION IN EAST ASIA – FROM DATA TO POLICY, VIRTUAL MEETING



Duration: 18-27 April 2022

### Description of activities in 2022:

The AIT RRC.AP supported the EANET Secretariat organized an awareness workshop on the State of Acid Deposition in East Asia – From Data to Policy on 20 June 2022 on an online platform. The objectives of the workshop were to increase public understanding of acid deposition issues, share EANET achievements over the last 20 years, and explore further collaboration ideas for future EANET projects based on the findings and recommendations of PRSAD4 (4th Periodic Report on the State of Acid Deposition in East Asia). Altogether 79 participants, including 38 women, from 17 countries including 13 EANET participating countries participated in the workshop. Participants included EANET national

focal points, SAC members, policymakers, national researchers, and scientists. Around 36% joined the EANET event for the first time. Participants were highly satisfied with the relevance of the content. The panel discussions recommended a way forward, including expansion of monitoring sites, which may include the use of low-cost sensors. For more information about the workshop, please consult the EANET

Weblink:

- 🌐 <http://www.rrcap.ait.ac.th/news/Pages/vol23no2-02.aspx>



## ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

Efforts to promote SDG4 at AIT in 2022 included delivering a professional development course for practicing engineers in Bangladesh, a Youth Academy in sustainable energy in Myanmar with German support, a Youth Energy Academy with participants from seven countries in south and southeast Asia designed to equip them with skills for designing and implementing

sustainable energy projects at community level, and an intensive course on designing and building simple solar systems. Other educational activities involving Thai and European partners included courses in climate governance and implementation and in energy policy and planning.



### PROFESSIONAL DEVELOPMENT CERTIFICATE PROGRAM FOR "LOCAL GOVERNMENT ENGINEERING DEPARTMENT"



*Duration: 18 July 2022 – 5 January 2023*

#### Description of activities in 2022:

This Professional Development Certificate Course was designed for 23 participants from the Local Government Engineering Department (LGED), Bangladesh. Its six different fields allowed the practicing engineers in LGED to develop their skills and strengthen their knowledge through active participation and learning the most up-to-date engineering theory and techniques delivered by AIT's renowned faculties and practitioners. The program was broadly address the technical and practical issues encountered by the engineers in their work as well as enhance their engineering skills in applying the modern tools and techniques. With the emerging technologies and innovative materials for the design and construction of safe and economical infrastructure in the region, AITX has designed tailor-made professional development certificate programs on the following engineering fields (areas of specialization):

- Transportation Engineering (TE)
- Geotechnical Engineering (GE)
- Construction Engineering and Infrastructure Management (CEIM)
- Sanitation and Plumbing (S&P)
- Earthquake Engineering (CM)
- Construction Management (CM)

Web link:

<https://extension.ait.ac.th/news/local-government-engineering-department>





## POST YOUTH ENERGY ACADEMY (YEA) MENTORING, VIRTUAL MEETING SDGS: MAIN: SDG 7-AFFORDABLE AND CLEAN ENERGY



Duration: 11-31 March 2022

### Description of activities in 2022:

This post-YEA mentoring series was designed to steer the first stages towards developing and implementing the ideas of the Pico-Streamers team that leveraged their award of orEUR 1,000 during YEA 2021 as sponsored by the Regional Program of Energy Security and Climate Change in Asia and the Pacific of the Konrad Adenauer Stiftung (KAS-RECAP). The mentoring series consisted of four sessions, each 60-90 minutes long convened once a week during 11-31 March 2022.

Session 1 was led by the Sustainable Energy Youth Network (SEYN) and AIT's RRC.AP on identifying the challenges hindering the progress of the implementation of their project idea and prioritizing, discussing possible solutions for the identified challenges, and designing an action plan. The project was undertaken using the design sprint process in the Miro Board. The second session focused on guiding the engineering aspects of the pico-hydro systems including turbine installation and measuring turbine efficiency. Teams were also informed on different technical and socioeconomic aspects to consider during their site visit for information collection. The session was delivered by Mr. Patrick

Pawletko, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ) on 19 March 2022. Similarly, the third session was organized on sustainable hydropower with experience sharing from the Mekong region on 24 March 2022. The session was led by Mr. Shoon So Oo, Regional Sustainable Energy Lead for the WWF Greater Mekong hosted by the WWF Myanmar Office, and Ms. May Thida Muang, Programme Officer, Climate and Energy Program, WWF, Myanmar, who is also an AIT Alumnus. The speakers shared their experience with renewable energy from Myanmar, including solar energy applications, hydropower applications, and micro-hydro technical assessments in the community. The session invited all interested YEA alumni to join and listen to the experience of the WWF Myanmar team. The final session was led by the Yunus team on 31 March 2022.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no1-03.aspx>



Design sprint process conducted during the first mentoring call



Participants attending the third YEA mentoring session



## YOUTH ENERGY ACADEMY (YEA) 2022



*Duration: 10-16 October 2022*

### Description:

The fourth edition of the Youth Energy Academy in Asia was held on 10-16 October 2022 at the Asian Institute of Technology, Thailand. The program convened 24 young participants from seven countries in south and southeast Asia to equip them with skills for designing and implementing sustainable energy projects at the community level.

The seven-day intensive program combined morning theory sessions, including presentations and designing thinking exercises, with practical afternoon sessions including tutorials and hands-on do-it-together workshops to design and build simple solar and electronic systems. Site visits in the vicinity of AIT allowed participants to learn about renewable energy applications and interact with practitioners.

During the week, selected teams worked on a series of thinking exercises and consultations aimed to refine their project ideas, which were pitched to a small jury on the last day to compete for a YEA Small Grant Award of EUR 1,000 and virtual mentoring calls following the program.

YEA 2022 was carried out in close partnership and collaboration with experts and partners including from the AIT Department of Energy, Environment and Climate Change, the Yunus Centre AIT, the AIT Community Farm, Yunus Thailand, the Klong 6 Community Learning



Center in Pathum Thani, Chiang Mai University's Energy Technology for Environment Research Centre, the Austrian Biomass Association, and other guest speakers who contributed their time and expertise.

The program was financially supported by the Regional Project Energy Security and Climate Change Asia-Pacific of the Konrad-Adenauer-Stiftung (KAS) and executed by the Regional Resource Center for Asia and the Pacific (RRC.AP) in partnership with the Sustainable Energy Youth Network (SEYN).

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no4-08.aspx>



## CAPACITY BUILDING PROGRAMME FOR MRV AND TRANSPARENCY



*Duration: 2021 – 2025*

### Description:

The UNFCCC Climate Action and Support Transparency Training (UNFCCC-CASTT) is a capacity-building program designed to cater to stakeholders at all levels of competencies within national climate governance and implementation. This program aims to build the institutional and technical capacity of developing countries to effectively participate in existing measurement, reporting, and verification (MRV) arrangements under the UNFCCC and the Enhanced Transparency Framework (ETF) under the Paris Agreement. The program will be carried out in collaboration with Alliance for Global Water Adaptation (AGWA), IHE Delft Institute for Water Education, and Oregon State University.



*Participants of CASTT Adaptation Academy 2022 with their certificates*

Weblink

<https://unfccc.int/castt-adaptation-academy>



## AIT ALUMNUS DR. TWARATH SUTABUTR AIMS TO CHANGE THE KNOWLEDGE AND LEARNING PROCESS IN THAILAND



*Duration:*

**Description:**

Dr. Twarath Sutabutr is the President of the Office of Knowledge Management and Development (OKMD), an autonomous public organization in Thailand under the Office of the Prime Minister. Dr. Twarath is a public servant by career, a geotechnical engineer by training, and an energy policy & planner by experience and has held important positions, serving as the head of Thailand's team in multilateral agencies such as UN, IEA, APEC, and ASEAN. His work in energy planning spaces consists of a cross-sectional portfolio, including the ASEAN Plan of Action in Energy Cooperation (APAEC) 2010-2015, Thailand Integrated Energy Blueprint (TIEB) 2015, Energy 4.0 & Smart Grids Master Plan, and the innovative Local Energy Planning (LEP) initiatives.

He completed his PhD in Civil and Environmental Engineering from the Massachusetts Institute of Technology in 1999 and a Masters in Geotechnical and Transportation Engineering in 1992 from the Asian Institute of Technology (AIT). He was President of the AIT Alumni Association Thailand Chapter from 2018 to 2019.

This month, a team from AIT's Office of Public Affairs talked to Dr. Twarath to discuss his new role at OKMD and his academic life at AIT.

*Could you tell us about OKMD and your role?*

Currently, I serve as the President of the Office of Knowledge Management and Development (OKMD). It is a public organization that oversees a learning process.

The learning process, a vital part of society, is continuously changing and has now become a lifelong process. The scenario is evolving as we move forward in the 21st century with advancing digital technology, the internet, and social media. Hence, many people taught in one field could re-learn, re-train, and re-inspire themselves on new things. We must also link knowledge beyond school with digital and cyberspace.



OKMD was established in 2005 under the premiership of Dr. Thaksin Shinawatra and is mandated to facilitate the learning process outside the school system. We are a supplemental tool of the government to help Thai citizens learn more outside school. It has two subunits: Thailand Knowledge (TK) Park, which is located on the 8th Floor of Central World, and the Discovery Museum, which I am in charge of, situated close to the Grand Palace.

OKMD's mission for the next decade is to ensure that we are not just providing the learning process on the physical platform but also that Thai Society can take on the more advanced learning process in the digital space.

<https://ait.ac.th/2022/10/ait-alumnus-dr-twarath-sutabutr-aims-to-change-the-knowledge-and-learning-process-in-thailand>



## STUDENTS FROM SIAM UNIVERSITY VISIT AIT



*Duration:*

**Description:**

6 October 2022: A group of international students and faculty members from Siam University (SU) visited the Asian Institute of Technology (AIT) to learn about the campus, including the International Unified Bachelor's and Master's Degree Program offered in collaboration between the two institutions.



The visit was conducted as a part of the cooperation between the two institutions, dating back more than five years. AIT and SU signed their first Memorandum of Understanding (MoU) and Memorandum of Agreement (MoA) in May and November 2017, respectively, outlining a five-year plan to boost institutional collaboration in academics and research and develop joint academic activities and educational linkages. Following the initial period's completion, the agreements were renewed in August 2022 for an additional five years in response to mutual interest in upgrading relations.

The International Unified Bachelor's and Master's Degree Program aims to prepare trained future AIT and SU graduates for quality research, focusing on emerging areas of research and innovation. The program offers students an opportunity for quality higher education and accelerated graduation, producing global engineering leaders with international exposure. Under the program, students can enroll in an accelerated program with an opportunity to gain a Bachelor's and Master's degree within five years. The Bachelor's Degree is awarded by Siam University, while AIT awards the Master's Degree.

The visiting group consisted of 16 international students from Germany, Myanmar, China, Nepal, India, Philippines, and Canada and were accompanied by seven faculty members from the Civil Engineering Department, Information Technology Department, and International College of Siam University.

The visit's main objective was to showcase AIT's academic and research facilities, campus environment, and infrastructure and encourage the students to pursue higher education at AIT. They met with AIT President Prof. Kazuo Yamamoto; Prof. Nitin K Tripathi, Director, Special Degree Programs; Prof. Dieter Trau, Dean, School of Engineering and Technology, and department heads and faculties who gave presentations about AIT and their respective departments. Students also took a tour of AIT and enjoyed its green campus and infrastructure. In addition, they were informed about the three schools and the academic programs of AIT. The students visited AIT's research labs and became familiar with ongoing projects and research activities.

<https://ait.ac.th/2022/10/students-from-siam-university-visit-ait>





## ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

In 2022, AIT contributed to the achievement of SDG5 by inaugurating a degree program in gender and development studies in Asia. Further, female enrolment at AIT reached 38% in January and 44% in June and October. International Women's Day 2022 was marked by AIT granting scholarships with partner support to four female masters students from Afghanistan and a

screening and panel discussion with French support on women's empowerment. Another event marking International Women's Day 2022 included inviting three women engineers from Afghanistan, Sri Lanka, and Thailand to join AIT to address water and sanitation-related issues.



### 25 YEARS OF GENDER AND DEVELOPMENT STUDIES (GDS) AT AIT



*Duration:*

**Description:**

The first degree-awarding program in Gender and Development Studies (GDS), established in 1997, is a pioneering program that continues to lead important work toward global goals, from the commitment to gender equality at the Beijing Conference in the mid-1990s to the Millennium Development Goals (MDGs) and the ongoing Sustainable Development Goals (SDGs). Prof. Kazuo Yamamoto, President of AIT, highlights the importance of GDS at AIT when he notes that, "The role of AIT is to produce region-specific knowledge and solutions, and we are in a strategic location geographically to be able to do so. Gender and Development have always been at the core in this endeavor since it encompasses the social, cultural, and political perspective."

Things did not happen easily. Before 1990, not a single course was taught about gender and development at AIT. However, in the 1990s, as gender mainstreaming initiatives emerged in the development sector, interest rose in making engineers more gender-sensitive. That is when the GDS program at AIT began as a small project to raise awareness on gender perspectives among engineers and then developed into a full-fledged academic program. New ideas always face difficulties, but as we fast forward to this year, AIT is proud to celebrate 25 years of GDS as a regional hub of excellence in



gender and development. The program has always been committed to not only generating knowledge through interdisciplinary research and publications on gender and development, especially in the Global South, but also to serve as an extension and catalyst of grassroots community-based efforts working to build capacity on gender and development globally. Our alumni continue to pave the way as leading experts in the region, serving as gender specialists and program officers in international and national organizations, establishing their own NGOs, becoming leading academicians, politicians, civil society leaders, and policymakers, and working as good neighbors, colleagues, friends, and family who extend empathy to those who are marginalized and fight for gender equality.

Weblink:

<https://ait.ac.th/2022/09/25-years-of-gender-and-development-studies-gds-at-ait>



## AIT WOMEN STUDENTS AND ALUMNI



*Duration:*

**Description:**

In 2022, 809 new students joined AIT, including 20 exchange and visiting students. In the January 2022 semester (including the March term), of the 212 new students enrolled, 38% were female. In the August 2022

semester (including the June and October terms), of the 597 new students, 44% were female. In 2022, 604 students graduated, including visiting and exchange programs, of whom 44% were female.



## AIT SCHOLARSHIPS FOR AFGHAN FEMALE STUDENTS: PROVIDING EDUCATION OPPORTUNITIES IN AN UNCERTAIN TIME



*Duration:*

**Description:**

For the Spring Semester starting in January, the Asian Institute of Technology (AIT) initiated scholarships for a master's program that will allow four female students from Afghanistan to receive an education at AIT. AIT, the generous donors of these scholarships, and the student recipients are all contributing to the goal of the International Women's Day 2022: Break the Bias.

Last Fall, when the news of women in Afghanistan not getting equal opportunities for schools and jobs reached AIT, the leading international postgraduate institute in Thailand established for sustainable development of the region, AIT President Dr. Eden Woon saw the need to initiate a scholarship for Afghan female students in order



to fulfill the institute's mission. Sharing the same values, the Thai Pipe Industry, Osotspa Public Company, and the CEO of Christiani & Nielsen Energy Solutions (CNES), Bangkok agreed to sponsor four scholarships with AIT.

🌐 <https://ait.ac.th/2022/03/ait-scholarships-for-afghan-female-students-providing-education-opportunities-in-an-uncertain-time>



## "WOMEN AND THE OCEANS" TOPS BILL ON INTERNATIONAL WOMEN'S DAY 2022



*Duration:*

**Description:**

The French Embassy in Thailand and AIT celebrate the work of female scientists studying and working to protect the world's seas

"Gender equality today for a sustainable tomorrow" was the theme of the United Nations' commemoration of International Women's Day 2022, celebrating the work of women and girls in fighting climate change. Following this theme, the French Embassy in Thailand and AIT chose to shine the spotlight on "Women and the Oceans." The Embassy of France in Thailand, the United Nations Development Programme (UNDP) Thailand, and the Asian Institute of Technology organized a screening

of a documentary film and panel discussion on March 8 to commemorate International Women's Day 2022

Leading women scientists from France and Thailand, including budding scientist Maria Eugénia Fernandes Freitas, an AIT Master's student from Brazil, took to the stage to share insights and inspirational stories of working with the world's oceans. AIT Professor Kyoko Kusakabe moderated the discussion, with the audience joining online and onsite at the Alliance Française Centre in downtown Bangkok.

Highlighting that healthy oceans are key to conserving the health and wellbeing of our planet, Mr. Sébastien

de Vaujany, First Secretary of the Embassy of France in Thailand, said: "The French Embassy is honored to organize this event to celebrate women scientists' empowerment in marine and ocean conservation. It will hopefully inspire the new generation to help achieve transformative change in the sector where women have been much less present."

<https://ait.ac.th/2022/03/women-and-the-oceans-tops-bill-on-international-womens-day-2022>



## "WATER UNITES US" 3 AIT ENGINEERING STUDENTS ACCELERATE PROGRESS TOWARDS CLEAN WATER AND SANITATION FOR ALL



Duration:

Description:

February 11, 2022 — The 7th International Day of Women and Girls in Science Assembly, held virtually on February 11, 2022 at the United Nations (UN) Headquarters in New York and focused on the role of women and girls in science as agents of change. With the theme of "Equity, Diversity, and Inclusion: Water Unites Us," three AIT engineering students from three different countries shared inspirational stories of the personal journey and research that unite them as agents of change to accelerate progress towards SDG6: Clean Water and Sanitation for All.

According to the report released by the World Health Organization and UNICEF in July 2021, billions of people around the world will be unable to access safely-managed household drinking water, sanitation, and hygiene services in 2030 unless the rate of progress quadruples.



To accelerate progress, three women engineers from Afghanistan, Sri Lanka, and Thailand have joined the Asian Institute of Technology (AIT) to address various water and sanitation issues in support of sustainable development.

<https://ait.ac.th/2022/02/water-unites-us-3-ait-engineering-students-accelerate-progress-towards-clean-water-and-sanitation-for-all>



## AIT SEEKS A NEW CHAIR PROFESSOR TO LAUNCH A REGIONAL RESEARCH CENTER FOCUSING ON GENDER AND FORCED DISPLACEMENT



Duration:

Description:


The Asian Institute of Technology (AIT) is among eight universities mandated by the International Development Research Centre (IDRC) to establish regional research chairs and research hubs in the Global South focusing on forced displacement. The open competitive call for proposals globally has led to the establishment of eight such positions across South and Southeast Asia, the Middle East, East Africa, and Central and South America.

The search for a Chair Professor to head the initiative at AIT is currently underway. They will lead AIT's research on gender in the context of conflict-induced, climate change-

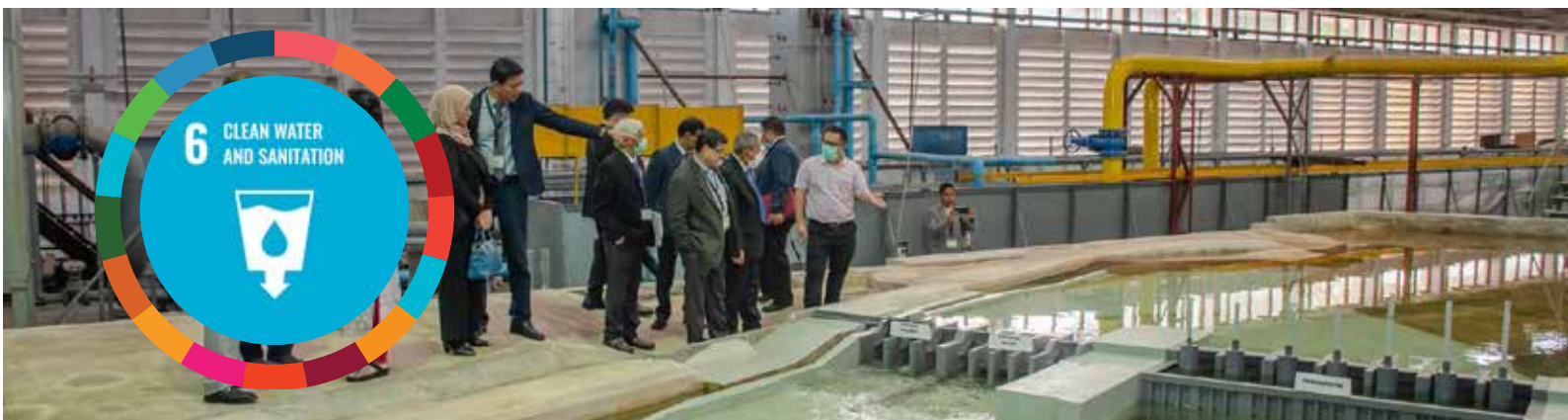
and disaster-induced, and development-induced forced displacement to create a basis for evidence-based advocacy for the region. Professor Kyoko Kusakabe and Assistant Professor Joyee S. Chatterjee of AIT's Gender & Development Studies, the two minds behind the winning proposal, are leading the search. Together, they highlight why this center, its research, and the Chair, matter a great deal to the region.

The United Nations High Commissioner for Refugees (UNHCR) reported that 82.4 million people were forcibly displaced worldwide at the end of 2020. More than two

thirds (or 68%) of all refugees and those displaced abroad came from just five countries: Syria (6.7 million), Venezuela (4 million), Afghanistan (2.6 million), South Sudan (2.2 million), and Myanmar (1.1 million). Additionally, 48 million people are internally displaced. According to the report, this results from persecution, conflict, violence, human rights violations, or events seriously disturbing public order.


<https://ait.ac.th/2022/03/ait-seeks-new-chair-professor-to-launch-regional-research-center-focusing-on-gender-and-forced-displacement>





## ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL

In 2022, AIT continued to promote research on water security and climate adaptation, educate responsible future environmental leaders, and enable the transfer of research findings into practice and policy in South and Southeast Asia with German, UN, and Thai support. A workshop addressed adaptations for sustainable

groundwater resources management in the Lower Mekong Region. One project aimed to strengthen the capacities of stakeholders in Nepal, India, and Vietnam to assess water security. Finally, World Water Day 2022 was marked by an awareness-raising at AIT on the importance of groundwater and plastics-related risk.



### GLOBAL WATER AND CLIMATE ADAPTATION CENTRE: AACHEN – BANGKOK – CHENNAI – DRESDEN (ABCD CENTRE)



Duration: May 2021 – December 2025

#### Description:

The objectives of the Centre are to conduct research on water security and climate adaptation, educate responsible future environmental leaders, and enable the transfer of research results into practice and policy in South Asia and Southeast Asia. Three interconnected, synergistically intertwined research clusters are Water Security, Water Resources Management, Secure Water Supply, and Water Treatment; Ecosystem Resilience and Nature-Based Adaptation Measures; and Transfer Strategies for Climate Adaptation: Traditional Knowledge,

Local Economies and Societal Acceptance. The consortium comprises RWTH Aachen University (RWTH), the Asian Institute of Technology (AIT), the Indian Institute of Technology Madras (IITM), Technische Universität Dresden (TUD), and the United Nations University – Institute for Integrated Management of Material Fluxes and of Resources (UNU-FLORES).

Weblink:

<https://abcd-centre.org>



Project team from five institutes (RWTH, AIT, IITM, TUD, and UNU-FLORES) meeting during WSCC2022



Interactive workshop on the research clusters of ABCD-Center held in hybrid mode in April 2022



## TOWARDS MAINSTREAMING ECOSYSTEM-BASED ADAPTATIONS FOR SUSTAINABLE GROUNDWATER RESOURCES MANAGEMENT IN THE TRANSBOUNDARY CAMBODIA-VIET NAM MEKONG DELTA AQUIFER, LOWER MEKONG REGION (GEBA) FUNDED BY SUSTAINABLE MEKONG RESEARCH NETWORK (SUMERNET)



Duration: May 2022 to April 2023

### Description:

The GEBA project aims to mainstream Ecosystem-based Adaptation to transform planning and decision-making processes in the management of transboundary aquifers (TBAs) in Asia, specifically targeting the transboundary Cambodia-Mekong River Delta aquifer. The project takes a two-dimensional scaling approach that includes horizontal scaling to showcase the benefits of EbA and develop mechanisms for integrating it with groundwater management, and vertical scaling to contribute policy recommendations to integrate EbA into regulations and policies across different sectors in Cambodia and Viet Nam. The project seeks to build community awareness, enhance stakeholder capacities, and facilitate potential formulation of an operational cooperation mechanism between Cambodia and Viet Nam to promote the sustainable use of shared aquifer resources. The project has three objectives:

- To create and strengthen policy-relevant knowledge on transboundary groundwater
- To strengthen capacities of local stakeholders in mainstreaming EbA into regulations and policies related to transboundary Cambodia-Mekong River Delta groundwater management
- To develop policy recommendations for integrating EbA into regulations and policies across different sectors in Cambodia and Viet Nam

Three work packages have been developed to achieve the project's objectives: (1) integrated assessment of EbA and groundwater resources; (2) development and analysis of mechanisms for integrating EbA and groundwater management; and (3) capacity building and advocacy through engagement and communication. The project prioritizes marginalized groups and gender-inclusive approaches and seeks to raise public awareness through socio-multimedia content creation and promotional campaigns.

### Weblinks

- <https://www.sumernet.org/project/towards-mainstreaming-the-ecosystem-based-adaptations-for-sustainable-groundwater-resources-management-in-the-transboundary-camb>
- <https://wem.ait.ac.th/wems-new-project-geba-kick-off-meeting/>



*Project kick-off meeting held on 26 May 2022 to introduce the GEBA project and its activities and showcase plans for implementing its activities*



*Project discussion and activities dissemination at the SUMERNET Annual Meeting 2022*



*Policy engagement and training workshop held at Can Tho University, Viet Nam*



## BUILDING CAPACITIES FOR WATER SECURITY ASSESSMENT IN ASIAN CITIES



Duration: 2021-2022

### Description:

The overall objective of this project is to build the capacities of early-career scientists, researchers, practitioners, and government agencies in Nepal, India, and Vietnam in assessing water security at city-scale. The project has developed a computer-based tool to help assess water security, and train stakeholders in the three countries to use this tool. It is expected that this project will serve as

an avenue to act as a vital decision making support tool to enable city stakeholders to operationalize water security.

Weblink

<https://www.apn-gcr.org/project/building-capacities-for-water-security-assessment-in-asian-cities>



Participants in Water Security Assessment Tool (WATSAT) held in Nepal in September 2022



Participants in Water Security Assessment Tool (WATSAT) held in Vietnam in September 2022



Participants in Water Security Assessment Tool (WATSAT) held in India in August 2022



## AIT AND PARTNERS MAKE GROUNDWATER VISIBLE THROUGH CELEBRATION OF WORLD WATER DAY 2022



Duration:

### Description:

March 22, 2022 – On the occasion of World Water Day 2022, the Asian Institute of Technology (AIT) in partnership with the Stockholm Environment Institute (SEI), the Sustainable Mekong Research Network (SUMERNET), Chulalongkorn University, and Thailand's Department of Groundwater Resources organized a celebration to raise awareness of the importance of groundwater. Despite being out of sight, the impact of groundwater was brought to the surface through activities "Making the Invisible Visible."

World Water Day is an annual United Nations observance day held on March 22 to highlight the importance of fresh water and to advocate for the sustainable management of freshwater resources. The theme of this year's celebration was "Groundwater – Making the Invisible Visible."

Groundwater accounts for 98% of water on land areas. It provides almost 50% of all drinking water worldwide, 40% of water for irrigated agriculture, and about 30% of water required for industry. Across Asia, groundwater accounts for over 25% of total usage of all water in irrigation,



food production and industry, and domestic use. It sustains ecosystems, maintains the base flow of rivers, and prevents land subsidence and seawater intrusion. Moreover, groundwater is an important part of the climate change adaptation process.

[https://ait.ac.th/2022/04/ait-and-partners-make-groundwater-visible-through-celebration-of-world-water-day-2022/?utm\\_source=rss&utm\\_medium=rss&utm\\_campaign=ait-and-partners-make-groundwater-visible-through-celebration-of-world-water-day-2022](https://ait.ac.th/2022/04/ait-and-partners-make-groundwater-visible-through-celebration-of-world-water-day-2022/?utm_source=rss&utm_medium=rss&utm_campaign=ait-and-partners-make-groundwater-visible-through-celebration-of-world-water-day-2022)



## GLOBAL WATER & SANITATION CENTER LAUNCHED



*Duration:*

**Description:**

The Global Water & Sanitation Center (GWSC) funded by the Bill & Melinda Gates Foundation was launched on November 30 at the Asian Institute of Technology (AIT). The launch ceremony was attended by more than 140 participants representing more than 45 organizations, including International Financing Institutions (World Bank, Asian Development Bank, Asian Infrastructure Investment Bank, Islamic Development Bank), Development Partners (United Nations Children's Fund, United Nations Environment Programme, United Nations Development Programme, United States Agency for International Development), academic and research institutions, and governmental agencies.

In his welcome remarks, Dr. Anat Arbhahirama, Vice Chair of the AIT Board of Trustees, extended his good wishes for the Center and said, "Since AIT's establishment, we have contributed to not only develop human resources



through our programs but also in implementing several applied research projects with an emphasis on technology for development. With over 25,000 alumni working in different parts of the world and a significant volume of research, I am confident that AIT is very familiar with the region and has a strong network and connection with different governments and development partners which can support initiatives such as this."

<https://ait.ac.th/2022/11/global-water-sanitation-center-launched>



## EXPERTS DISCUSS WATER SECURITY AND CLIMATE CHANGE AT THE WSCC2022



*Duration:*

**Description:**

The annual Water Security and Climate Change Conference (WSCC 2022) was organized on December 1-3 in hybrid mode in Bangkok. The event was inaugurated by H.E. Mr. Varawut Silpa-archa, Minister of Natural Resources and Environment, Government of Thailand. H.E. Mr. George Schmidt, Ambassador of Germany to Thailand; H.E. Mr. Yuichi Oba, Deputy Chief of Mission and Minister (Economic Affairs), Embassy of Japan in Thailand; H.E. Dr. Suwit Khunkitti, Vice Chair, AIT Board of Trustees, and Prof. Mukund Babel, Chair of the Scientific and Organizing Committee of WSCC2022 contributed remarks during the opening session.

The overarching objective of WSCC conferences is to proliferate the exchange of knowledge and practical know-how on the intrinsic relationship between water security and climate change and advance fundamental and action research in this domain, which will help humankind address one of the most significant challenges of our times. The conference sought to go beyond science and build bridges between state-of-the-



art advances in multiple disciplines and different groups of stakeholders and practitioners.

The themes of the WSCC2022 Conference were:

- Transitioning from sectoral to nexus thinking
- Strengthening climate change adaptation strategies
- Translating knowledge into action

<https://ait.ac.th/2022/12/experts-discuss-water-security-and-climate-change-at-the-wscc2022>



## RESEARCHERS AT THAILAND'S ASIAN INSTITUTE OF TECHNOLOGY (AIT) HAVE DEVELOPED WATSAT



*Duration:*

### Description:

Researchers at Thailand's Asian Institute of Technology (AIT) have developed WATSAT, a web-based water security assessment tool that can evaluate where cities stand by measuring five distinct aspects of urban water security: water supply, sanitation, water productivity, water environment, and water governance.

Kaushal Chapagain is a doctoral student in the Water Engineering and Management (WEM) program at the Asian Institute of Technology (AIT), Thailand. His research area of interest includes water security, urban water resource management, and the resource nexus.

Dr Hassan Tolba Aboelnga is a researcher at TH KIn, University of Applied Sciences, Germany with a particular interest in urban water security issues and integrated water resources management. He is vice chair of the Middle East Water Forum and sits on the Management Committee of specialist groups at the International Water



Association. He is Chair of the Urban Water Security working group and a member of the Water Security Task Force at the International Water Resources Association.

Professor Mukand S. Babel is professor of Water Engineering and Management at the Asian Institute of Technology (AIT), Thailand. He leads the Climate Change Asia (CCA) initiative at AIT for Catalyzing Capacity for Action to address climate change issues in the region.

<https://ait.ac.th/2022/06/asias-largest-cities-lack-water-security>



## KNOWLEDGE TRANSFER AND POLICY ADVOCACY – UNEP SEA CIRCULAR REGIONAL DIALOGUE ON PLASTIC VALUE CHAIN



*Duration: May-November 2022*

### Description:

The SEA circular project aims to reduce marine litter by addressing the management of the plastic value chain in Southeast Asia implemented by UNEP and COBSEA with funding support from the Government of Sweden.

The regional dialogue series is composed of three sub-activities:

1. Session on Human Rights Based Approach (HRBA) in the Plastic Value Chain and Extended Producer Responsibility;
2. Regional Dialogue on Perceptions on Plastic Waste: A dialogue on the findings of a regional study and the role of businesses in accelerating circularity, and
3. Regional Dialogue on Plastic Credit: A Circular Solution for Plastic Waste Management

These regional dialogues aimed to explore the views of key players and stakeholders on how plastic value chain mechanisms and instruments can support plastic circularity in the region. An additional aim is to inform practitioners and stakeholders on what is required to support a fair, level playing field for human rights-based

approaches to achieving a harmonized operational framework.

The regional dialogues also share research findings to increase understanding of business and consumer attitudes towards plastic waste. The findings help to explore how human factors and organizational cultures affect actions, especially those of consumers, business entities, policy makers, and the informal sector. The key findings provided practical knowledge that is fundamental for the creation of business-to-business and consumer-to-business platforms in order to set up conducive business environments that can help to scale up utilization of market-based instruments in plastic value chains.

Understanding financial instruments such as plastic credit concepts and market mechanisms will support the development of pathways towards a harmonized standard for plastic credits.

The regional dialogues show that the consultation process is significant to the application of human rights-based approaches in businesses. Analysts should

consider how relevant stakeholders' policy development, communication systems, and evidence-based information work together to materialize EPR implementation with human rights-based approaches. Understanding plastic credit concepts and market mechanisms will support the development of pathways towards a harmonized standard for plastic credits. Identification of risks and opportunities in plastic credit financing instruments being introduced into the informal waste management sector

can help to strengthen market-based instruments in the plastic value chain.

Key research findings on consumers' attitudes and positive behaviors that can guide the creation of business-consumer solutions for plastic waste management. Understanding enablers and barriers influence small and medium businesses in actively contributing to circularity in the plastic value chain.



## WATER SECURITY AND CLIMATE CHANGE CONFERENCE (WSCC2022)



Duration: 1-3 December 2022

### Description:

The Water Security and Climate Change Conference (WSCC2022), organized by the Asian Institute of Technology (AIT) in association with CNRD (TH Köln), SWINDON (TU Braunschweig), FSC (University of Hohenheim), SDGnexus Network (University of Gießen), and the ABCD Centre (TU Dresden) was held on 1-3 December 2022 at Novotel Bangkok Future Park Rangsit, Thailand. The WSCC is an annual event where scientists, policymakers, and stakeholders from various sectors discuss the diverse facets of water security and its inter-relationship with climate variability and climate change. The objective of these conferences is to proliferate the exchange of knowledge and practical know-how on the

intrinsic relationship between water security and climate change and to advance fundamental and action research in this domain that will help humankind address one of the greatest challenges of present times. WSCC2022 had three overarching themes: (a) transitioning from sectoral to nexus thinking; (b) strengthening climate change adaptation strategies; and (c) translating knowledge into action. The conference included 12 technical sessions, 16 partner sessions, 2 special sessions, and 4 side events.

Weblink:

<https://watesecurity.info>



270+ participants from 30+ countries attended WSCC2022



Participants during the opening ceremony of WSCC2022.



## SUSTAINABLE USE OF WATER ON CAMPUS



*Duration:*

### **Description:**

AIT has had its own wastewater treatment plant since July 2012, a system that collects all sewage water from the campus, which amounted to 155,877m<sup>3</sup> in 2022, and all treated water was released back to AIT's canal system and reused for garden use on campus. AIT has a closed-loop canal system, with rainwater stored for the summer and all landscaping and greenery maintained using this water. This helps save clean water in accordance with and with support from Thai Law. In addition, AIT has its own reservoir within the campus, with an area of 92,893 m<sup>2</sup>, storing rainwater to be used during the dry season.





## ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE AND MODERN ENERGY FOR ALL

2022 witnessed AIT involvement in energy-related technological innovations, climate policy analysis, emissions control, and renewable energy sources in south and southeast Asia. AIT organized a conference on lessons learned on technical, social, financial, and economic aspects of energy, the environment, and climate

change. Another event brought together stakeholders to discuss strategies for achieving zero carbon emissions in India. While its own electricity consumption rose thanks to easing in a post COVID-19 scenario, AIT made further progress in making its consumption solar-dependent and becoming a net zero campus.



### ENERGY DEMAND CHANGES INDUCED BY TECHNOLOGICAL AND SOCIAL INNOVATIONS (EDITS-AIT)



*Duration: 2020-2023-Phase 1*

#### Description:

The main objective of the project on Energy Demand Changes Induced by Technological and Social Innovations (EDITS-AIT) is to create a research community with a focus on end-use, demand-side perspectives that further dialogue and cross-fertilization of research and policy analysis through data, concepts and methodologies. It is funded by the Research Institute of Innovative Technology for the Earth (RITE), Japan. In August 2022, SMARTS research team participated in the Annual EDITS meeting at IIASA, Austria, where Prof. Joyashree Roy moderated the session and the team

contributed to research discussions and ideas. Later in December 2022, the team participated in an EDITS quarterly meeting where Center deputy director Dr. Joyee Chatterjee delivered a talk on "Communicating Demand-Side Solutions: Comparative Analysis of Media Coverage across Countries" based on AIT-led research in the 2023 fast track research sessions at the quarterly EDITS group meeting co-hosted by IIASA (Austria) and RITE (Japan).

Weblink:

<https://www.smartscenter.org/copy-of-pisces>





## EDSSEA- ENERGY DEMAND IN SOUTH AND SOUTHEAST ASIA



Duration: 2022-2026

### Description:

The goal of this project is also to develop a service-oriented bottom-up demand model to help in providing inputs to climate policy analysis. South Asian countries are expected to experience fast economic growth and infrastructure development in the coming three decades. Most of the demand in the region does not have historical path dependency or hard lock-in effects. This provides ample scope and opportunities for planning to decouple energy demand growth from emission growth. Such energy demand planning can have the benefit of reduced cost of supply capacity expansion planning and synergies with the near-term SDG framework.

Weblink:

<https://www.smartscenter.org/copy-of-edits>



## MULTI-COUNTRY ELECTRICITY TRANSITION POTENTIAL AND CHALLENGES



Duration: 2022-2026

### Description:

The Multi-Country Electricity Transition Potential and Challenges (MCET) research project seeks to establish energy modeling teams in Thailand and Bangladesh with the goal of designing zero-carbon pathways and scenarios that can be compared across countries. By leveraging the expertise of local researchers, the MCET project aims to identify the potential and challenges associated with transitioning to renewable energy sources in these countries. The project also seeks to promote knowledge sharing and collaboration between researchers and policymakers across borders to accelerate progress towards a sustainable energy future. With a focus on multi-country analysis, the MCET project



has the potential to inform and guide the development of sustainable energy policies in other countries as well.

Weblink:

<https://www.smartscenter.org/copy-of-edssea>



## PANEL DISCUSSION ON OPEN SOURCE MODELING OF ENERGY SYSTEMS – THEORY AND APPLICATIONS: IDEEA MODEL APPLICATION, TECHNICAL PARTNER SMARTS, ICUE 2022



*Duration: 1-3 December 2022*

### Description:

The ICUE 2022 conference was organized by the Asian Institute of Technology (AIT) to exchange research ideas, outputs, experiences by covering technical, social, financial, economic, and policy issues on Energy, Environment, and Climate Change. The conference was part of the ICUE conference series organized by AIT

every two years. The panel discussion on open-source modeling of energy system IDEEA was held in ICUE 2022.

Weblink:

<http://icue2022.ait.ac.th/conference-sessions>



## POSTER PRESENTATION AT THE INTEGRATED ASSESSMENT MODELING CONSORTIUM (IAMC) ANNUAL MEETING



*Duration: 29 November – 1 December 2022*

### Description:

Center postdoc researcher Dr. Shreya Some presented the Center's work on "Modeling energy demand, energy efficiency improvements and lifestyle change for South Asian countries: A topic analysis" in the IAMC Annual meeting, Maryland, USA.

Weblink:

<https://www.iamconsortium.org/event/fifteenth-iamc-annual-meeting-2022>



## KEYNOTE ADDRESS IN WORKSHOP): IDEEA-MODEL WORKSHOP ON INDIAN ZERO CARBON ENERGY PATHWAYS



*Duration: 7-8 September 2022*

### Description:

Professor Joyashree Roy, the Center's director, delivered the keynote address at a collaborative workshop focused on the demand side during the 1st Indian Zero Carbon Energy Pathways (IDEEA) workshop. The workshop, which was held on September 7 and 8, 2022, brought together policymakers and members of the media to discuss strategies for achieving zero carbon emissions in India. As a distinguished expert in sustainable development

and energy economics, Professor Roy's insights were highly valued. Her keynote address provided valuable insights into the role of demand-side interventions in driving the transition to a zero-carbon economy in India. Her contribution to the workshop helped to deepen the understanding of the challenges and opportunities associated with this transitioning.



## PROFESSIONAL TRAINING COURSE ON "LIQUEFIED NATURAL GAS (LNG) AND PROJECT FINANCIAL MANAGEMENT"



Duration: 19-28 May 2022

### Description:

This course was designed and customized based on a need assessment from client organizations focusing on the financial aspect of the LNG sector in the region. Participants were mostly from mid- to senior-level officers who are mostly engaged with energy operations for Bangladesh. This training program was designed to transfer knowledge and skills to individuals and government institutions and to enable them to manage and lead positive changes, solving problems, delivering good services, and improving the performance of the

professionals involved as the public utility managers in order to benefit the operation of the Bangladesh Oil, Gas & Mineral Corporation (Petrobangla). This course consisted of several site visits in close collaboration with AIT Extension.

Weblink:

<https://extension.ait.ac.th/news/liquefied-natural-gas-lng-project-financial-management>





## AIT AND CHRISTIANI & NIELSEN ENERGY SOLUTIONS CO., LTD. SIGNS MOU WITH AGRIVOLTAIC PROJECT



Duration: 7-8 September 2022

### Description:

The Asian Institute of Technology (AIT) and Christiani & Nielsen Energy Solutions Co., Ltd. (CNES) signed a Memorandum of Understanding (MOU) focusing on Research & Development and Electrical Energy Generation in Agrivoltaic Solar Farming. The MOU was signed on 10 June 2022 between AIT President Dr. Eden Y. Woon and Mr. Bhargab Mohan Das, CNES Managing Director & CEO, and AIT alumnus who did his Masters in Structural Engineering in 2005. Mr. Sutee Nuntaburus, CNES Head of Engineering & Construction, also attended the ceremony.

CNES is a developer and turnkey solution provider of Sustainable Solutions with C&I Solar PV Projects as a predominant business venture together with assorted supporting services pertaining to the Energy Storage, Sustainable Agriculture, Automated Operations, and Building Energy Efficiency Enhancement as the other facets of its services.

Mr. Bhargab stated that it is always good to be back at his alma mater and gratifying to work with the Institute through this partnership which focuses on one of AIT's Five Key Thematic Areas in Food & Energy, one of the core areas of importance as well in his company. He is confident that it will be a win-win partnership for both parties.

Weblink:

<https://ait.ac.th/2022/06/ait-and-christiani-nielsen-energy-solutions-co-ltd-sign-mou-on-agrivoltaic-project>



## TALK ON "NEW ERA OF LEADERSHIP: ECONOMICS OF SUSTAINABLE ENERGY"



Duration: July 12, 2022

### Description:

The SMARTS Center in collaboration with Indian Oil Corporation Limited, organized a webinar titled "New Era of Leadership: Economics of Sustainable Energy" in January 2022. The webinar aimed to explore the economics of sustainable energy and the role of leadership in promoting its adoption. The keynotes speakers were Dr. Joyashree Roy, Director of the SMARTS Center, and Dr. SSV Ramakumar, Director of Research and Development at Indian Oil. They discussed various topics related to sustainable energy,

including energy transition, the circular economy, and the role of innovation in promoting sustainable energy. The webinar concluded with a panel discussion on leadership in the energy sector and the need for collaborative efforts to achieve sustainable energy goals. The event was well-attended by participants from academia, industry, and government, highlighting the importance of sustainable energy in today's world.

Center director Prof Joyashree Roy delivered a talk on "New Era of Leadership: Economics of Sustainable Energy", Indian Oil Lead Talks 16th Edition at Corporate Office, New Delhi, India.

Weblink:

<https://www.smartscenter.org/post/new-era-of-leadership-economics-of-sustainable-energy-indian-oil-lead-talks-2022>



## SUSTAINABLE ENERGY CONSUMPTION ON CAMPUS



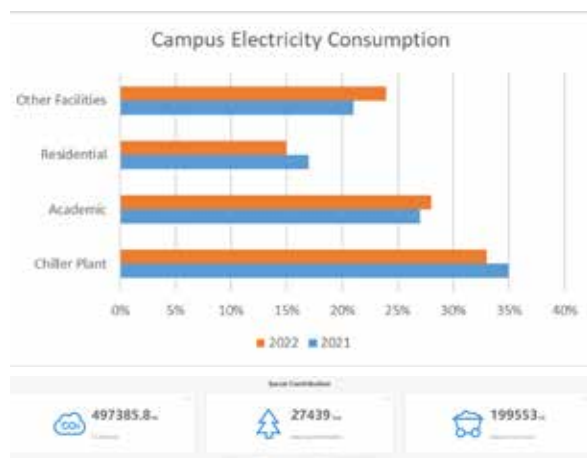
Duration:

### Description:

In 2022, AIT's overall electricity consumption was 10,184,128 kWh, an increase of 8% over the previous year, which could be justified by the post COVID-19 scenario now that the campus is back to its normal operations. Of this, 33% was used for chilling operations, 28% for academic use, 15% for residential purposes, and 24% for other operations.

AIT has an installed capacity of 50 kW rooftop photovoltaic (PV) units with an average solar electricity generation capacity of 175 kWh/day, which supplies power to the Institute's library. In 2022, the PV system generated 63,984 kWh of electricity. AIT also extended its solar energy generation of 4.2 kW to a 12-kW rooftop PV in October 2019 in one of the academic buildings, with average solar electricity generation of 50 kWh/day. In 2022, the PV system generated 13,001 kWh of electricity. AIT is currently coordinating with local partners and companies over the feasibility of generating the major part of its power consumption from renewable solar energy by installing PV systems, targeting a 1 MW solar rooftop project in 2023-2024 as AIT embarks towards a Net Zero Campus

Two AC/DC electric vehicle fast-charging stations were installed at AIT in collaboration with EA (Energy Absolute) in 2018, the only facility of its kind in AIT and vicinity. The installation of two EV-charging stations at AIT is intended



primarily for research purposes and to encourage the community to use electric vehicles, a small step toward a carbon-neutral smart campus. This was evidenced in 2022 by the increased number of EV vehicles on campus.



## SUBIR RAHA MEMORIAL LECTURE ON "CLIMATE CONVERSATION AND SECRETS OF PROSPERITY IN 21ST CENTURY"



*Duration: July 7, 2022*

### Description:

Center director Prof. Joyashree Roy delivered the highly anticipated Subir Raha Memorial Lecture on the topic of "Climate Conversation and Secrets of Prosperity in the 21<sup>st</sup> Century." The prestigious event was organized in India by Oil and Natural Gas Company Ltd. to highlight the significance of the subject matter. Prof. Roy's lecture shed light on the critical intersection of climate change and economic prosperity, emphasizing the need for

sustainable practices in the energy sector. Her expertise and thought-provoking insights sparked valuable discussions and offered pathways towards a prosperous and environmentally-conscious future. The lecture served as a tribute to the late Subir Raha, commemorating his contributions to the industry while paving the way for a more sustainable and prosperous 21<sup>st</sup> century.



## TALK ON "DEMAND-SIDE SOLUTIONS AND LINKS TO THE SDGS"



*Duration: July 12, 2022*

### Description:

Center director Prof. Joyashree Roy, delivered an impactful talk on "Demand-side solutions and links to the SDGs" at a significant event organized by UNESCAP, ADB, and UNDP. Focused on the Asia Pacific SDG partnership, Prof. Roy highlighted the crucial role of demand-side solutions in achieving the Sustainable Development Goals (SDGs). Her talk emphasized the need to align economic growth with environmental sustainability and social progress. The

event brought together key stakeholders from the region, fostering collaborations and knowledge exchanges on innovative approaches to addressing sustainability challenges. Prof. Roy's expertise contributed to advancing the discourse on sustainable development in the Asia Pacific region, inspiring actionable solutions for a more inclusive and sustainable future.



## TALK ON "CLIMATE CHANGE AND LDC GRADUATION: A COMBINATION OF DEMAND SIDE AND SUPPLY SIDE LOW-CARBON ENERGY TRANSITION DIVERSIFIES AND SHIFTS INVESTMENT PATTERNS AND CREATES NEW ECONOMIC OPPORTUNITIES"



*Duration: 23-25 August 2022*

### Description:

Center director Prof. Joyashree Roy delivered an enlightening talk on "Climate change and LDC graduation" at an event organized by the UN Committee for Development Policy. Focusing on the combination of demand-side and supply-side low-carbon energy transition, Prof. Roy highlighted how this diversifies investment patterns, creates economic opportunities, and facilitates LDC graduation. Her expertise resonated with policymakers and experts present as she emphasized

the need for transformative actions to address climate change while promoting sustainable development. The event facilitated knowledge sharing and collaboration among stakeholders, fostering discussions on innovative strategies for a low-carbon future. Prof. Roy's thought leadership contributes significantly to the global discourse on climate change and its implications for LDCs, inspiring a path towards a more sustainable and inclusive world.



## PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT AND DECENT WORK FOR ALL

2022 saw AIT students explore ways to link human wellness to sustainability through participation in, for example, a training program on adopting the circular economy in Thailand's food supply chain. AIT also joined an Indian partner to work toward skills development, training of trainers, and capacity building

for employability, job creation, and entrepreneurship. An innovative initiative was the development of a marketplace app designed to help bamboo farmers in the Philippines market their products. AIT students and faculty members also researched options for enhancing rural livelihoods in the Mekong Delta Region.



### CAPACITY BUILDING PROGRAMME FOR MRV AND TRANSPARENCY



*Duration: 2021-2025*

#### **Description:**

The UNFCCC's Climate Action and Support Transparency Training (UNFCCC-CASTT) is a capacity-building program designed to cater to stakeholders at all levels of competencies within national climate governance and implementation. This program aims to build the institutional and technical capacity of developing countries to effectively participate in existing measurement, reporting, and verification (MRV) arrangements under the UNFCCC and the Enhanced Transparency Framework (ETF) under the Paris Agreement. The Program will be carried out in collaboration with Alliance for Global Water Adaptation (AGWA), the IHE Delft Institute for Water Education, and Oregon State University.



Weblink:

<https://unfccc.int/castt-adaptation-academy>



## STUDENTS EXPLORE SOLUTIONS TO ADDRESS RURAL-URBAN HUMAN WELLNESS TOWARD SUSTAINABILITY



*Duration:*

**Description:**

Students from the Asian Institute of Technology (AIT) and various universities shared their innovations on sustainable urban wellness at the 4th Sustainability Hackathon, which was organized from 18 to 20 November 2022 at AIT's Entrepreneurship Center (EC). The hackathon focused on interlinkages within rural-urban migration movements and how human wellness in urban areas can be improved as people migrating from rural areas face many urban challenges. Jointly organized by AIT's Department of Development and Sustainability (DDS), AIT-EC, and Computers and Structures, Inc. (CSI), a total of 14 teams from different universities participated in the event.



<https://ait.ac.th/2022/11/students-explore-solutions-to-address-rural-urban-human-wellness-toward-sustainability>



## ADOPTING A CIRCULAR ECONOMY IN THE FOOD SUPPLY CHAIN



*Duration:*

**Description:**

The Food Innovation, Nutrition, and Health (FINH) and Food Engineering and Bioprocess Technology (FEBT) academic programs of the Asian Institute of Technology (AIT) together with Aston University, Chulalongkorn University, University of the Thai Chamber of Commerce, Panyapiwat Institute of Management, and Federation of Thai Industries (FTI) organized a training program on "Adopting the Circular Economy in Thailand's Food Supply Chain." The program was held at the Federation of Thai Industries (FTI) building in Bangkok on July 27, 2022. There were 65 participants from food industries, academic institutions, and enterprises.

The training program was organized under the Newton Fund Project's "Adopting the Circular Economy in Food Supply Chain Through Industry-Academia Collaboration." The Newton Fund finances the project through the National Research Council of Thailand (NRCT). It aims to promote the importance of the bio-circular economy in the food supply chain by coordinating and interacting directly with industries so that they can use a circular economy in their field.

This research project is a collaboration between five academic institutions, including the Asian Institute of Technology, Aston University, Chulalongkorn University, the University of the Thai Chamber of Commerce, and the Panyapiwat Institute of Management. This project aims to understand agri-food producers' and retailers' attitudes towards emerging issues in the food supply chain system, specifically referring to circular economy methodology as a means of addressing food waste management.

<https://ait.ac.th/2022/08/adopting-a-circular-economy-in-the-food-supply-chain>





## NATIONAL POWER TRAINING INSTITUTE (NPTI) SIGNS AND MOU



Duration:

Description:

A Memorandum of Understanding was signed between the Asian Institute of Technology (AIT) and the National Power Training Institute (NPTI), India to work together in an integrated and collaborative manner in the field of sustainable development of the power sector and beyond. The scope of the MoU includes collaborating as consultants in the fields of education, training, and consulting to accelerate, expand, and achieve the objectives of skills development and capacity building programs launched by AIT and NPTI towards better employability, enhanced job creation, and entrepreneurship.

Expertise from the institutions, facilities, infrastructure, and resources will be exchanged to meet national and international objectives. Various interactive sessions, workshops, roundtables, seminars, and conferences will be organized. The Institutes will work jointly towards enhancing the industry-academia interface and aligning



training, capacity building, and skills development to meet the industry-specific requirements and for better employability. They will support each other within the "Training the Trainers" program, entrepreneurship development programs, course standardization and certification programs, testing protocols, commercialization of R&D activities, etc.

<https://ait.ac.th/2022/12/ait-and-national-power-training-institute-npti-sign-mou>



## MOU WITH BANGLADESH HI-TECH PARK AUTHORITY (BHTPA)



Duration:

Description:



The Asian Institute of Technology (AIT) signed a Memorandum of Understanding (MOU) with the Bangladesh Hi-Tech Park Authority (BHTPA) to develop skilled human resources suitable for technological revolution during a ceremony held online via Zoom. Under this agreement, AIT and BHTPA will work together to exchange global knowledge on the application of engineering and technology in agriculture, business, industry, and sustainable development.

<https://ait.ac.th/2022/08/ait-signs-mou-with-bangladesh-hi-tech-park-authority-bhtpa>



## MOBILE APP DEVELOPED BY AIT'S ALUMNA EYES TO BOOST LIVELIHOOD OF BAMBOO FARMERS



*Duration:*

**Description:**

Bamboost, an online marketplace app developed by Ms. Analiza Cruzat Diaz, a Climate Change and Sustainable Development graduate from the School of Environment, Resources, and Development, Asian Institute of Technology as part of her masters thesis aims to help bamboo farmers in marketing their products.

The Bamboost App is one of the outputs from a project titled "Mainstreaming of Bamboost App as an Online Marketing Platform of Bamboo Farmers in Select Science & Technology Community-Based Farm (STCBF) Sites" jointly led by Ms Diaz and Prof. Love Jhoye M. Raboy of the University of Science and Technology of the Southern Philippines. It is funded and supported by the Philippines Council for Agriculture and the Aquatic and Natural Resources Research and Development of the Department of Science and Technology (DOST PCAARRD). This project also forms part of the collaboration program between DOST-PCAARRD and AIT. Soft launching and user testing of the Bamboost App was held on May 24, 2022 at the iDEYA Center for Technopreneurship Innovation, Mindanao State University, Iligan Institute of



Technology (MSU-IIT), which was meant to introduce the app to bamboo farmers, processors, and entrepreneurs who will eventually be the target clients once it is up and running. It was attended by key players in the bamboo value chain in Northern Mindanao, Philippines. Apart from Iligan City, Bukidnon and Iloilo provinces are the other initial target sites of the Bamboost project where the app is to be adopted.

<https://ait.ac.th/2022/06/mobile-app-developed-by-ait-alumna-eyed-to-boost-livelihood-of-bamboo-farmers>



## STUDY ON HOW SMALL-SCALE FARMERS IN VIETNAM ADAPT TO CLIMATE CHANGE WINS BEST PAPER AWARD



*Duration:*

**Description:**



A research paper by students and faculty members at the Asian Institute of Technology (AIT) won the Best Paper Award from the 10th Asian Society of Agricultural Economists (ASAE) International conference held in Beijing on December 6-8, 2021. The paper investigates how rural small-scale farmers, who produce 90% of rice in the Mekong Delta Region (MDR), adapt to climate change, and offer policy recommendations to enhance rural livelihoods.

<https://ait.ac.th/2022/01/study-on-how-small-scale-farmers-in-vietnam-adapt-to-climate-change-won-the-best-paper-award>



## BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

In 2022, AIT was involved with innovation in data formats, participation in a conference in the Philippines on incubators and startups promoting sustainability and social responsibility, and collaboration between China, Lao PDR, and Thailand over regional railway links. 2022 issues of AIT Solutions' Technology magazine

discussed applying perspectives, case studies, and practices to enhancing the skills of professionals working in urban infrastructure and hydropower generation, as well as potential solutions and challenges involved in applying AI-based systems in agriculture, medical technology, structural engineering, and traceability.



### SOFTWARE PLUG-IN DEVELOPMENT FOR ETABS, SAP2000, AND SAFE RELEVANT SDGS: SDG 9 – INDUSTRY, INNOVATION, AND INFRASTRUCTURE



Duration: January-August 2022

#### Description:

AIT Solutions is working with NUS, Singapore on a project funded by the Building Construction Authority (BCA), Singapore to develop a software plug-in for structural engineering software (ETABS, SAP2000, and SAFE).

The goal of this research project is to develop a solution to link and check structural Analysis & Design (A&D) reports against Building Information Modelling (BIM) models created using different combinations of A&D and BIM software (commonly used in Singapore). The solution is to have a common data format so that large amounts of information found in A&D reports and BIM models can be comprehensively transferred to enable review by end users, including Professional Engineers and their modeling teams, Qualified Persons (QPs) and the project grantor. It is envisaged that the provision of such a solution will enable productivity in the submission and processing of structural A&D reports and BIM models to improve by at least 30% compared to current practice.

As part of the scope of work, the tasks being carried out include:

- Develop a plugin for CSI ETABS able to export and import data according to the schema provided.



- Develop a plugin for CSI SAP2000 able to export and import data according to the schema provided.
- Develop a plugin for CSI SAFE able to export and import data according to the schema provided.

The developed plugin will need to:

- Support the engineering workflows from QPs. This means that it must be able to differentiate first-time import of data as well as updating of models with the imported data.
- Provide a report of errors, the number of elements imported or exported, and the number of elements that were not imported or exported.
- Provide a mechanism for users to enter identifying information or parameters of the element being designed, such as Element Mark.



## KEYNOTE TALK ON "AIT AND STUDENT SUSTAINABILITY STARTUPS AT THE 2ND NATIONAL CONFERENCE AND 1ST INCUBATEE SUMMIT, AGRI-AQUA TECHNOLOGY BUSINESS INCUBATION



*Duration:*

**Description:**

Prof. Nophea Sasaki, a member of the Natural Resources Management program at the Asian Institute of Technology (AIT), was invited to speak at the 2nd National Conference and 1st Incubatee Summit, AGRI-AQUA Technology Business Incubation, held in Baguio, Philippines from November 23-25, 2022. During his talk, Prof. Sasaki shared his experience and insights into AIT's efforts to foster student-led sustainability startups, drawing from his personal experiences as a co-founder of several startups with his students. The audience included a diverse range of attendees, including entrepreneurs, academics, investors, and government officials. Prof. Sasaki's presentation highlighted AIT's commitment to supporting and empowering its students to develop innovative solutions that promote sustainability and social responsibility. The talk also served as an opportunity for AIT to showcase its research and innovation ecosystem to a wider audience and to further promote its mission of advancing sustainable development in Asia and beyond.



## WEBINAR TALK "THE ROLES OF INNOVATIONS AND STARTUPS FOR ADDRESSING THE IMPACTS OF COVID-19 ON WASTEWATER"



*Duration: 5 August 2023*

*Organizer: UNEP and AIT*

**Description:**

Professor Sasaki's talk highlighted the environmental impact of COVID-19 on wastewater due to the disposal of PPE waste. He discussed the alarming amount of waste produced by PPE and its harmful effects on the environment, especially on water systems. He presented MIT's estimation of 2,628,000 tons of PPE waste generated in 2020 alone and the staggering amount of face masks entering the ocean, causing more microplastic pollution.

However, the talk also addressed a potential solution to this global problem through innovations and startups.

Professor Sasaki emphasized the role of innovative technologies in addressing the environmental impact of PPE waste, without compromising economic growth. He suggested that startups could play a crucial role in developing sustainable and cost-effective solutions to tackle this problem. The talk served as a call-to-action for the scientific and entrepreneurial communities to collaborate and innovate to reduce water waste caused by PPE.



## KEYNOTE ADDRESS: "ENERGY SYSTEM TRANSITION FOR PROSPEROUS BANGLADESH -SMART INNOVATIONS FOR NATIONAL DEVELOPMENT"



Duration: 23 December 2022

### Description:

Center director Prof. Joyashree Roy delivered a compelling keynote address on "Energy System Transition for Prosperous Bangladesh – Smart Innovations for National Development" at a workshop organized by E-Palli in Malaysia. As a renowned expert in sustainable development and energy economics, Professor Roy provided valuable insights into the role of energy system transitions in promoting economic growth and sustainable development in Bangladesh. Her keynote address

focused on innovative solutions and smart technologies that can help drive the transition to a low-carbon economy in Bangladesh while promoting economic prosperity. The workshop provided a platform for knowledge sharing and collaboration between experts from Bangladesh, Malaysia, and other countries in the region, highlighting the importance of regional cooperation in achieving sustainable development goals.



## AIT BRRC WEBINAR SERIES: HIGH-SPEED RAILWAYS –A FLAGSHIP PROJECT FOR BOOSTING REGIONAL CONNECTIONS



Duration: 8 April 2022

### Description:

Description A webinar on high-speed railways, a flagship project for boosting regional connections, was launched by the Belt and Road Research Center of the Asian Institute of Technology and experts in this field and partners from Thailand and China. High-speed railways are among the signature projects within the Belt and Road initiative. The high-speed rail line will cross Thailand and connect with Vientiane, Laos and Kunming, China. It is also planned to reach Malaysia and Singapore in the future, which is of great significance to regional connections and multilateral development and will expand the construction network to become one of the mainstream transportation options.



### Weblink:

🌐 AIT BRRC – BRRC Webinar #4: High-speed railway: A flagship project for boosting regional connections - [https://www.youtube.com/watch?v=x\\_qQWlvkRKw](https://www.youtube.com/watch?v=x_qQWlvkRKw)



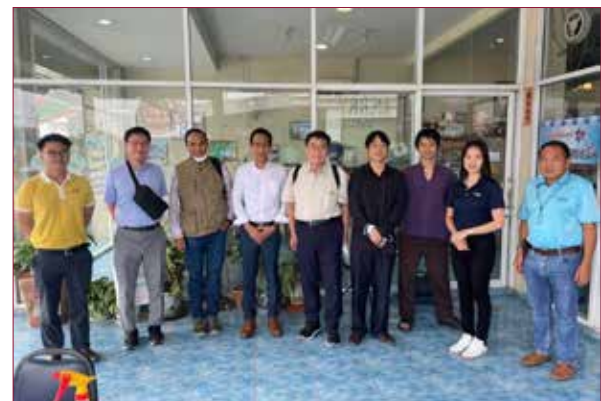
## SCOPING STUDY OF THE BROILER VALUE CHAIN IN THAILAND



Duration: 2022

### Description of activities in 2022

Field visits were conducted in July and November 2022 in several provinces in Central Thailand by researchers from AIT, the ADB Institute (ADBI), Chulalongkorn University, the Japan External Trade Organization, and Kobe University with ADBI funding and help from the Department of Livestock Development. Key informant interviews were conducted with major food processing companies, broiler farmers, and government officers. Lessons learned will be used to develop a proposal in 2023.





## TECHNOLOGY MAGAZINES

### CITIES & INFRASTRUCTURE | ARTIFICIAL INTELLIGENCE: PROMISES & CHALLENGES



*Duration: August-December 2022*

#### Description:

In 2022, AIT Solutions published two issues (August and December) of its Technology magazine. The August 2022 issue brought together ideas, perspectives, and case studies from authors actively involved in applying the latest technological and engineering practices in urban landscapes as well as the application of innovative ways of enhancing the skills set of professionals involved in urban infrastructure projects. The authors also shared reliable technologies specific to the application in micro-level assessment of the condition of buildings as well as macro-level monitoring and assessment of damage and reconstruction of buildings and infrastructure at the city level. In that issue, the authors also addressed ways through which culture of innovation and creativity could be nurtured as a soft skill among engineering professionals. Insights into understanding complex urban systems and community awareness systems aiming to develop a resilient urban environment, climate change adaptation measures for sustainable and resilient urban infrastructure, and non-engineering green infrastructural solutions for sustainability of our water resources were some of the topics covered in that issue.

The December 2022 issue, which developed the theme of "Artificial Intelligence: Promises & Challenges," presented

some of the work of researchers actively working in applying AI-based systems in agriculture, medical technology, structural engineering, and traceability. The issue also included a section with an industry expert focusing on how AI is impacting their current business and how they think AI is going to impact society, business, industry, and organizations in the coming decade.

Weblink:

<http://solutions.ait.ac.th/kps/magazines>



## MEET THE EXPERT TALK SERIES – 2022

### AIT TECH TALK – ENHANCED INTEGRATION IN INFRASTRUCTURE PROJECTS THROUGH BIM



*Duration: January-June 2022*

#### Description:

In 2022, AIT Solutions collaborated with Eight-Japan Engineering Consultants Inc. (EJEC) to organize an Expert Talk on Digital Transformation in Bridge Maintenance in Japan. The talk focused on aging bridge infrastructure in Japan, the importance of regular inspections and maintenance of these infrastructure, and overcoming the shortage of bridge inspection engineers. The talk presented the latest digital technologies EJEC has developed and is now applying in its regular bridge inspection work.

In another Expert Talk, we invited Prof. Vilas Nitivattananon, Dean, School of Environment, Resources, and Development, AIT to share his insights into the Sustainable Infrastructure and Built Environment. In this talk, Prof. Vilas focused on creating an awareness among engineering and

related professionals involved in developing and managing infrastructure (e.g. energy, transportation, water, etc.), and the built environment (including buildings, facilities, public parks, etc.). With relevant examples, the talk also took a global view and placed it in a regional, national, and local context.

AIT Solutions and AIT Enterprises Alliance jointly organized an AIT Tech Talk in May 2022 that focused on the Enhanced Integration in Infrastructure Projects through BIM. This talk was conducted in collaboration with Moh and Associates, Taiwan. The Tech Talk covered the latest developments in the application of BIM, showcasing holistic integration of information of built infrastructure.



## INCUBATION SERVICE AGREEMENT BETWEEN AVECRIS PTE LTD AND AIT ENTREPRENEURSHIP CENTER



Duration: November 2022-May 2023

### Description:

This is an Incubation Service Agreement between AVECRIS Pte. Ltd. and the AIT Entrepreneurship Center, whereby both parties decided to work on a project named "Large Scale PCR Project." AIT EC is responsible for providing the incubation area and helping in the development of a heat exchange chamber to run PCR reactions of a volume

of 1,000 ml per cassette and featuring multiple volume options. In addition, AIT EC should also manufacture a prototype of a heat exchange chamber as well as develop a solenoid valve manifold to direct and redirect flows of three different liquids, including temperature monitoring and control software.



## SEDIMENT TRANSPORT STUDY FOR THE SANAKHAM HYDROPOWER PROJECT IN THE MEKONG RIVER BASIN PHASE 1



Duration: January-September 2022

### Description:

The Sediment Transport Study for the Sanakham Hydropower Project in the Mekong River Basin, Phase 1, was conducted from January to September 2022 with the primary objective of undertaking a comprehensive hydraulic and sediment transport analysis. The study focused on evaluating the potential effects of the Sanakham Hydropower Project development on the Mekong River downstream of the project site.

One of the key aspects of the study was to assess the impacts on the Thalweg, the deepest part of a river channel that generally carries maximum flow. By examining changes in sediment transport patterns and dynamics, the study aimed to identify and evaluate potential negative consequences resulting from the hydropower project.

Through an in-depth analysis, the study aimed to provide valuable insights into the potential alterations in sediment

transport and related ecological impacts. This information will enable the identification of appropriate mitigation measures to offset any adverse effects caused by the project's development. The study's findings will contribute to sustainable hydropower development in the region, aligning with Sustainable Development Goals (SDGs) 7 (Affordable and Clean Energy) and 9 (Industry, Innovation, and Infrastructure).

The completion of Phase 1 of this sediment transport study is an essential step in assessing and understanding the potential environmental implications of the Sanakham Hydropower Project. The insights gained from this study will serve as a crucial foundation for future decision-making processes, ensuring that the project is developed in a manner that minimizes its ecological impact while meeting the region's growing energy demands.



## HYDROLOGICAL CHARACTERIZATION OF THE ATHABASCA RIVER BASIN, CANADA



*Duration: 2020-2022*

### Description:

The aim of this research is to characterize the hydrology of the Athabasca River Basin in Canada using statistical and modeling tools for historical and future periods. The study (i) established the baseline hydrological condition

and range of natural variability, (ii) evaluated changes in hydrological conditions under climate change scenarios, and (iii) analyzed trends in the hydrological conditions in the basin.



## AIT SDG RESEARCH FAIR



*Duration: 2 December 2022*

### Description:

The Office of Sustainable Campus (OSC) hosted the AIT SDG Research Fair on December 2, 2022 at the Asian Institute of Technology, Thailand. The event aims to empower the AIT community by promoting thought, knowledge, and understanding of the Sustainable Development Goals (SDGs). The fair exhibited AIT students' and AIT centers' research in line with the SDGs in the hope of stimulating more research towards contributing to SDG achievement.

Ms. Sireesha Bantu, Director of OSC, stated in her welcome remarks that AIT has always been a research institute working for sustainable development, and this fair will promote more major research projects along with added efforts that will contribute to sustainability on campus and elsewhere. Professor Kazuo Yamamoto, President of AIT, highlighted his desire for AIT to become a living laboratory and sustainable campus. OSC has implemented various sustainability initiatives that serve as tangible examples as AIT strives to become a sustainable campus.

The fair featured research that supported SDGs 2, 7, 13, and 15, such as wildlife and environment conservation, energy conservation, and food conservation programs. President Yamamoto challenged everyone to pledge to make AIT a NetZero campus by 2030, noting that AIT has already launched a number of projects at various levels on campus. He went on to say that AIT has the long-term goal of becoming a fully sustainable campus, with numerous initiatives planned for the future. OSC and AIT's initiatives are consistent with SDGs 15, 7, and 13, which aim to safeguard biodiversity and ecosystems by enabling access to affordable, dependable, sustainable, and modern energy and to take immediate action to mitigate climate change and its consequences. The goal of the fair was to inspire students to contribute to these aims by conducting additional research and advocating sustainable practices in their areas of expertise. AIT is working towards reaching these SDGs and establishing a sustainable university through promoting sustainable activities on and off campus.

<https://ait.ac.th/2022/10/ait-wildlife-and-ecosystem-conservation-workshop-conducted/>





## REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

2022 witnessed AIT involvement in addressing the needs of the elderly, people with limitations, and disadvantaged communities throughout the region to help fight social and economic inequalities, especially through technological and industrial solutions leading to

increased greater resilience in the face of climate change. In partnership with UNDP, AIT also worked to raise awareness and enhance knowledge of the SDGs and in particular of the need to address inequalities among the Thai public through studies, publications, and seminars.



### STUDENTS FROM 39 COUNTRIES JOINED AIT FOR THE JANUARY & AUGUST 2022 SEMESTER



*Duration: January-September 2022*

#### Description:

In 2022, of a total of 3,868 applications received, 809 new students from 39 countries enrolled at AIT, including 20 exchange and visiting students.

In the January 2--2022 semester (including the March 2022 term), 212 new students enrolled from 28 different countries from seven different regions of the world: North America, South America, Southeast Asia, South Asia, East Asia, Africa, and Europe. Of these, 33% enrolled in the School of Engineering and Technology (SET), 36% in the School of Environment, Resources, and Development (SERD), and 30% in the School of Management (SOM). Approximately 62% of students were men and 38% were women. Of this intake, 17% received scholarships (full subsidy for tuition fees), 68% received AIT scholarships (partial tuition subsidy), and 15% were self-supporting or supported by external donors.

In the August 2022 semester (including the June and October 2022 terms), 597 new students were enrolled



from 29 countries from nine different regions: 57% from Southeast Asia and the Pacific, 34% from South and West Asia, 5% from East and Central Asia, and 4% from Europe and Africa. Of these, 37% were enrolled in SET, 35% in SERD, and 29% in SOM. 56% of these students were male and 44% were women. Of this intake, 21% received full scholarships including living allowances, 15% received scholarships for tuition and registration fee only, 8% were funded by external donors, 31% received AIT fellowships, and 25% were self-supporting.



## UN WORLD ENVIRONMENT DAY CELEBRATION JUNE 2022



Duration: 5 June 2022

### Description:

#### *AIT on the Path to Becoming a Sustainable Campus*

Calling for transformative action to save the environment, a World Environment Day (WED) event was organized at AIT. The event has become a global platform inspiring positive changes and promoting awareness and action for the environment. This year, it was celebrated with the slogan "Only One Earth," focusing on the need for living sustainably in harmony with nature. Three major themes were focused on: climate, nature, and chemicals and pollution. The event saw various exhibits and workshops promoting environment-friendly living such as reusing and upcycling, sustainable kitchens and food, and eco-



friendly products. A sustainable bazaar was introduced to promote green shopping practices. Various businesses encouraging eco-friendly and sustainable living showcased their products.



## SDG OPEN HACK BANGKOK 2022



Duration: 1-3 July 2022

### Description:

SDG Open Hack Bangkok 2022: Digital Solutions for the Wellness of Elders and People with Disabilities was held from July 1 to 3, 2022 in Hybrid Mode with partnership between the Asian Institute of Technology (AIT), Thailand and the University of Geneva both online and onsite at AIT's Entrepreneurship Center. The event was divided into three days: Day 1 was dedicated to the Bootcamp, Day 2 to the Hackathon, and Day 3 to the Pitch competition. The AIT Startup Incubation Program was the third phase of the SDG Open Hack Bangkok project, where three winning teams from the SDG Open Hack participated in a five-day intensive incubation program in the AIT Entrepreneurship Center, where they were trained to improve the clarity of their ideas and solutions for real-world applications through the development of prototypes or MVPs (Minimum Viable Products) using AIT's available resources.

Aiming to address an aging society's needs and improve the lives of people with limitations, the event's theme was "Digital Solutions for the Wellness of Elders and People with Disabilities." The event saw the participation of 14 teams from different universities around the world.

Weblink:

<https://tinyurl.com/sdgonenhackbkk>





## TECHNOLOGICAL AND INDUSTRIAL SOLUTIONS FOR CLIMATE CHANGE RESILIENCE



*Duration:*

*Part I: Impact Ideation, 18 November 2022*

*Part II: Impact Execution, 9 December 2022*

### **Description:**

The first workshop was designed for the participants to identify problems and co-create solutions for disadvantaged communities to help fight social and economic inequalities, biodiversity loss, and overall unsustainable consumption and production to preserve natural resources. The second part was a Pitch Competition focusing on technological and industrial solutions for climate change resilience. The prize was awarded to SET Master's student Sarach Rujiranurak for his innovative and eco-friendly pest-control machine that does not use pesticides.





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

In 2022, AIT Solutions participated in tests of structural performance in tall buildings located in the Philippines and Thailand with a view to ensuring public safety through seismic modeling and wind tunnel testing. In partnership with UNEP, AIT also organized a seminar on sustainable infrastructure for circular Cities and

innovations and startups in the water sector, including urban flood management in disaster-prone regions of Thailand, Pakistan, and Bangladesh. Another project addressed the issue of plastics leakage from industrial activities in Vietnam, the Philippines, Thailand, and Lao PDR.



### STRUCTURAL PERFORMANCE-BASED SEISMIC DESIGN OF MERGENT PHASE 2, PHILIPPINES



*Duration: March-August 2022*

#### **Description:**

AIT Solutions conducted Structural Performance-based Seismic Design of Mergent Phase 2, located in Makati City, Metro Manila, Philippines. The project is a residential development comprising two towers resting on a 10-level common podium developed by Alveo Land Corporation, Philippines. Tower B has 38 floors, and Tower C has 47 floors. Tower B is approximately 162.3 m tall, and Tower C is approximately 188.4 m tall from ground level. The site is located about 3.6 km from the West Marikina Valley Fault (WVF).

The primary focus of the work was to evaluate the structural performance of the building. The emphasis is on its overall performance and reliability to determine if it can satisfy the public safety in terms of strength and serviceability requirements under the effects of gravity and different levels of earthquakes.

Specifically, the scope of work that was carried out included:

- Review the structural system concept
- Develop performance-based evaluation criteria, including seismic design methodology, seismic performance goals, acceptance criteria, mathematical modeling, and simulation
- Create finite element models of the building with varying complexity and refinement suitable to understanding the response
- Carry out the different types of analyses to evaluate performance by progressively using linear-static, linear dynamic, and nonlinear-dynamic analyses, as appropriate
- Carry out detailed studies of the response and performance of primary structural members and systems in the structure
- Report on the evaluation and recommendation based on the results.



## EXPERIMENTAL SEISMIC FRAGILITY OF GYPSUM PARTITION WALLS



*Duration: January-August 2022*

### Description:

AIT Solutions conducted this project on behalf of Knauf R&D Center Co. Ltd. while keeping in view recent concerns over the seismic response of the nonstructural components of the buildings. This is due to relatively high investment costs for new construction and associated repair costs following earthquakes. Based on estimates from past earthquakes, nonstructural components and systems can account for more than half of the building's economic losses.

The primary objective of the project was to carry out a seismic experiment with gypsum partition walls. The project was carried out in two phases:

#### Phase 1: Cyclic tests of gypsum partition walls

In this phase 10 specimens of gypsum partition walls were tested, with the following scope:

- Installing gypsum wall specimens and setting up of the testing equipment
- Conducting seismic tests for gypsum partitions wall specimens
- Observing failure modes and gathering experimental data for seismic evaluation

#### Phase 2: Seismic performance evaluation of gypsum partition walls

The information gathered in Phase 1 was used to carry out the following work regarding the seismic performance evaluation of gypsum partitions walls:

- Reviewing information from the seismic tests
- Evaluating the seismic response, failure mechanisms, and fragilities of the gypsum partition walls
- Preparing a detailed report on the outcome of the evaluation and providing the overall technical advice as needed



## WIND ENGINEERING STUDY OF GRAND SOLAIRE PATTAYA



*Duration: November-December 2022*

### Description:

AIT Solutions conducted a wind tunnel study of 67-story Grand Solaire Tower. The building is located in Pattaya City, Chon Buri, Thailand 1.4 km away from the shoreline. Being the tallest in Pattaya City, the building has to withstand significant amounts of wind-induced structural load and cladding pressure. However, due to the structure's irregular geometric shape and overall height, code-provisioned wind load and pressure may have been inadequate. In response, wind tunnel testing was required to determine the reliable wind loads and pressures to be used in the design. The scope of work that was carried out involved:

1. Development of wind tunnel models: Three types of physical models were developed: High frequency force model, Pressure model for target building, and Proximity model for surrounding buildings.
2. Laboratory tests

Structural Load Test: Conduct structural load study tests for the target building for 36 wind directions using

high-frequency force balance techniques. Existing surrounding buildings configuration were considered in the test. Future surrounding buildings configurations will be considered as separate scenarios in the test.

Cladding Pressure Test: Conduct cladding pressure study tests for target building for 36 wind directions to measure local pressures on the exterior surface of the building. Existing surrounding buildings configuration were considered in the test. Future surrounding buildings configurations will be considered as separate scenarios in the test.

3. Wind climate study and analysis of test data  
Wind climate study: Carried out wind climate study with statistical analysis. This analysis was done together with the historical wind speed information obtained from the local weather stations and roughness changes experienced by the wind passing by nearby buildings.



## SDG HYBRID WEBINARS: INNOVATIONS FOR SUSTAINABILITY



Duration: 5 August 2022

### Description:



The UN Environment Programme (UNEP) in collaboration with the Asian Institute of Technology (AIT) organized an SDG hybrid webinar titled Innovations for Sustainability: Part 1 – Sustainable Infrastructure for Circular Cities and Part 2 – Innovations and Startups in the Water Sector on 5 August 2022 in the AIT Entrepreneurship Center and online. Sustainable Infrastructure for Circular Cities focused on building capacity to create an enabling environment (policies, financing, technologies, business models, and stakeholder engagement) to replicate and scale up good practices that support SDG 11. Innovations and Startup in the Water Sector provided a dialogue among various stakeholders to understand the drivers and challenges for innovations and startups to support SDG 6.



## INTEGRATED MANAGEMENT OF FLOOD AND DROUGHT IN THE MUN RIVER BASIN IN THAILAND



Duration: October 2021-March 2022

### Description:



The overall aim of the project is to build a strong basis for the development of an integrated approach to the long-term management of both drought and flooding in the Mun basin. The objectives of the study were to: (i) assess flood and drought risks in the Mun River basin for current and future climate with a 30-year time horizon (until 2050); (ii) develop a framework for integrated management of flood and drought in the Mun basin; and (iii) formulate adaptation strategies that will take into account connections between diverse hydro-meteorological extremes.



## PROFESSIONAL TRAINING COURSE ON "STRATEGIC LEADERSHIP AND MANAGEMENT"



Duration: 18-26 March 2022

### Description:

Training is teaching, or developing in oneself or others any skills and knowledge or fitness that relate to specific useful competencies. The purpose of training is to improve one's capability, capacity, productivity, and performance. Training may continue beyond initial competency to retain, enhance, and update abilities throughout one's working life in addition to the fundamental training necessary for a trade, occupation, or profession. This one-week training program was designed to transfer knowledge and skills to individuals and government institutions, enabling them to manage and lead positive changes, solving problems, delivering good services, and improving performance of the professionals involved in public utility management to benefit the operations of the Dhaka Power Distribution Company Limited (DPDC). The proposal was prepared for the DPDC as one of the courses in accordance with the Contract of Services between DPDC and AIT Extension for delivering customized professional development courses.

Web link:

<https://extension.ait.ac.th/news/professional-development-course-strategic-leadership-and-management>



## THE AIT RRC.AP SPEARHEADED THE VIRTUAL KICK-OFF CUM CONSULTATION FOR THE ERIA PROJECT ON DEVELOPMENT AND DISSEMINATION OF TECHNICAL GUIDELINES FOR PLASTICS AND RESIN PELLETS LEAKAGE PREVENTION FROM FACTORIES AND INFORMAL RECYCLING SECTOR IN ASEAN, VIRTUAL MEETING



Duration: 6 May 2022

### Description:

The AIT-RRC.AP spearheaded the virtual Kick-off and Consultation for the ERIA project on the development and dissemination of technical guidelines for plastics and resin pellets leakage prevention from factories and informal recycling sector in ASEAN, which was convened on May 6, 2022. About 22 participants from relevant local city stakeholders/partners including City Government Officers (from Manila, Vientiane, and Pattaya City), associations of plastic recyclers and plastic industries, and representatives from the Regional Knowledge Centre for Marine Plastic

Debris (RKC-MPD) of the Economic Research Institute for ASEAN and East Asia (ERIA) participated the meeting. The Kick-Off meeting presented and discussed the project's scope and detailed work plan with project collaborators and other key stakeholders involved in the project. The meeting obtained the involvement of the core project team and set the course for successful and smooth project collaboration with key stakeholders from project cities (Hanoi, Iloilo City, Manila, Nonthaburi, Pattaya, and Vientiane). The project will sustain the built momentum by

interfacing with key stakeholders and gathering relevant background data and surveys to understand the situation of plastic leakage hotspots in the sector. In addition, the project team will hold a series of technical meetings with country partners to incorporate inputs from the Kick-off meeting.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no2-06.aspx>



## PREPARATION OF AN INVENTORYING OF INDUS EMBANKMENTS AND BREACHING SECTIONS TO DOCUMENT THEIR CURRENT CONDITION AND FOR INFORMED DISASTER RISK & HAZARD MAPPING UNDER THE SINDH RESILIENCE PROJECT (IRRIGATION COMPONENT)



*Duration: 22 July 2022-31 October 2023*

### **Description:**

The province of Sindh is situated in a subtropical region lying between two monsoons; the southwest monsoon from the Indian Ocean and the northeast or retreating monsoon, deflected towards it by the Himalayan Mountains. The geography of Sindh along with the climatic conditions, being the lowest riparian in the Indus basin, render it vulnerable to various natural disasters.

Sindh experienced major floods in 1973, 1976, 1992, 1994, 1995, 2003, 2005, 2007, 2010, 2011, 2012, 2013, 2015, and 2022. Beside riverine floods primarily involving the Indus River, torrential flash floods have also severely impacted parts of Sindh. Floods in 2010 and 2011 were among the most devastating in the history of the region.

Since mid-June 2022, Sindh Province has been drenched by extreme monsoon rains that have led to the province's worst flooding disaster in decades. Heavy rains, or about three times the volume of the 30-year average rainfall,

have resulted in torrential flash floods along with urban and riverine floods that caused acute damage to the irrigation network in Sindh Province, impacting millions of people.

The core objective of this study is to conduct a detailed survey, field investigation, flood hazard mapping, and prepare an inventory of Indus River embankments lying within Sindh Province in order to identify critical hotspots that may affect a highly vulnerable population of over 13 million living along both the left and right banks of the Indus River. This will involve implementing an Environmental and Social Management Plan for vulnerable hotspots and flood water management in order to create resilient and sustainable infrastructure that will help protect human settlements and agricultural land and to produce a set of implementation protocols for stakeholders to combat climate change and its impacts in the region.



## ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

In 2022, AIT conducted a workshop on food innovations to be disseminated through higher education in Southeast Asia and incorporating cutting-edge technologies and innovative management in food processing. AIT also contributed to promoting the bio-circular-green economy model, and plastics waste

recycling in the region. Closer to home, AIT marked World Food Day by holding a video contest on repurposing food waste through sustainable practices in homes and campus dormitories. Students were also offered opportunities to observe sustainable farming practices and learn about organic farming methods.



### FOODI INFO DAY WORKSHOP ON FOOD INNOVATIONS & THE SDGS



Duration: 25 March 2022

#### Description:

The Food Innovation, Nutrition, and Health (FINH) and Food Engineering and Bioprocess Technology (FEBT) Academic Programs in the Department of Food, Agriculture and Bioresources (FAB), School of Environment, Resources and Development (SERD), Asian Institute of Technology (AIT) conducted a one-day workshop on the theme "Food Innovations & the Sustainable Development Goals (SDGs)" via a hybrid platform on 25 March 2022 to inspire action towards Sustainable Development Goals. A total of 87 participants (45 in person and 42 online) attended the workshop.

This workshop was organized under the project "Food Processing Innovation

(FOODI)". FOODI is a project co-funded by the Erasmus+ Program specifically to develop capacity building for higher education in Southeast Asia (SEA), especially incorporating cutting-edge technologies and innovation management in food processing with a view to turning the local food processing sector into a driver of social and economic growth. The FOODI consortium consists of 16 Institutions, including 6 from the EU and 10 from SEA. AIT is the first consortium partner to launch an academic program under the name of Food Innovation, Nutrition, and Health (The academic program created and developed within the framework of the project Erasmus+



Capacity Building-MSc Food Processing and Innovation (FOODI), reference number 598987, with co-funding from the EU. Prof. Anil Kumar Anal is the Principal Investigator for this project, representing AIT in the FoodI Consortium.

<https://ait.ac.th/2022/04/foodi-info-day-workshop-on-food-innovations-the-sdgs/>

<https://www.foodi-project.eu/events/859>



## THAILAND'S BIO-CIRCULAR-GREEN ECONOMY MODEL: AWARENESS RAISING, CAPACITY BUILDING AND INTERNATIONAL PERSPECTIVES SEMINAR SERIES 2022



Duration: 24 June-24 October 2022

### Description:

Thailand's Bio-Circular-Green Economy Model: Awareness Raising, Capacity Building and International Perspectives Seminar Series 2022 is jointly organized by experts in BCG, collaborators, and partners from Thailand. The circular economy aims at reusing and recycling resources. Green economy aims to keep the economy, society, and the environment in balance, leading to sustainable development. This seminar aims to provide a detailed focus on each relevant development sector, enhance public awareness, and promote Thailand's Bio-Circular-Green Economy Model, which primarily concerns SDG 12 – Responsible Consumption and Production through a series of four webinars and national conference, as follows:

- *The BCG Model and the food and Agriculture Sector* contribute to transforming the BCG model in the food and agriculture systems, perspectives, and technological interventions in Agro-Industrial Waste and implementation in Thailand and the APEC Region.
- *The BCG Model in the Health and Wellbeing Sector* delivers the experience from COVID19 and innovative healthy, green and sustainable recovery efforts, challenges and opportunities to improve the sustainable Health and Wellbeing Sector in Thailand.
- *The BCG Model in the Bioenergy, Biomaterial and Biochemical Sector* contributes to the mechanism of energy transition and bioenergy application for Thailand Carbon Neutrality in 2050.



- *The BCG Model in the Tourism and Creative Economy Sector* assists recovery and resilience in Thailand's economic growth, mobilizing the culture and creativity of sustainable tourism, gender equality, and women's empowerment for a circular economy in Thailand.
- *The BCG Model National Conference* summarized current findings from the four seminars, identified priority actions and opportunities, and presented the role of science and technology for further implementation of the BCG model in Thailand and the APEC region.

### Weblink:

- 🌐 AIT BRRC: Thailand's Bio-Circular-Green Economy Model Seminar Series 2022  
<https://www.youtube.com/playlist?list=PLyeWKke2P2bbj2rc11w00EgeAwbvmMDVA>



## WORKSHOP ON "CIRCULAR SYSTEMS INNOVATION FOR PLASTIC WASTE (CSI-PW)"



Duration: 24 June-24 October 2022

### Description:

The workshop on "Circular Systems Innovation for Plastic Waste (CSI-PW)" focused on outreach and public engagement. Held on November 1-2, 2022, the event was organized by the Center of Excellence in Nanotechnology (CoEN) at the Asian Institute of Technology (AIT) in collaboration with the University of Cambridge and Circularity Co., Ltd. (Thailand). Center director Prof. Joyashree Roy delivered a keynote address and participated in a panel discussion, sharing her expertise on circular systems innovation for plastic waste. The workshop aimed to explore innovative strategies and technologies to address plastic waste while aligning with Sustainable Development Goals (SDGs) 3, 9, 11, 12, 14, 15, and 17. By engaging experts, researchers, industry representatives, and policymakers, the workshop



fostered collaboration and public engagement towards a more sustainable and circular approach to plastic waste management.

### Weblink:

- 🌐 <https://www.smartscenter.org/post/circular-systems-innovation-for-plastic-waste>



## REDUCE FOOD WASTE VIDEO CONTEST



Duration: 16 October - 15 November 2022

### Description:

The Office of Sustainable Campus successfully planned an SDG 12 awareness campaign entitled “Responsible Consumption and Production” through a video contest aimed at discovering the AIT community’s hidden talent. The event was held in honor of World Food Day, which was observed on October 16, 2022, with the goals of reducing food waste and investigating the potential for repurposing food waste through sustainable practices in homes and dormitories. The competition aims to encourage sustainable consumption and production habits, one of SDG 12’s goals. According to data, 17% of food is wasted at the consumer level, and this campaign aims to urge individuals to make efforts to prevent food waste in order to significantly contribute toward attaining SDG 12.

The AIT community provided wonderful support for the video contest, and the Office of Sustainable Campus conveyed appreciation to AITE for their generous sponsorship and OFAM for their logistic support and for the unique rewards for the contest winners. The assistance of the Student Union (SU) in marketing and reaching out to students and AIT community members also contributed to the campaign’s success. Videos of the contest will be used to raise awareness and provide reminders about decreasing food waste and repurposing food waste in sustainable ways in the future. This campaign is a step toward fostering sustainable consumption and production habits, an important goal of SDG 12, and it encourages people to take action to create a more sustainable future.

The campaign is intended to accomplish Target 12.3, which focuses on decreasing per capita global food waste at the retail and consumer levels and eliminating food losses along the production and supply chains by 2030. The campaign aims to inspire consumers to take responsibility for their consumption patterns



and contribute to the attainment of SDG 12 by raising awareness about the necessity of decreasing food waste and repurposing food waste through sustainable techniques. The effective organization of the video contest as well as the overwhelming support from the AIT community indicate a favorable response to sustainable consumption and production patterns, which are critical for constructing a sustainable future.

🌐 <https://ait.ac.th/event/reduce-food-waste-an-invitation-to-join-a-video-contest-and-win-amazing-prizes>



## SUSTAINABILITY TRIP ORGANIZED BY THE STUDENT UNION



*Duration:*

### Description:

The SU Campus and Environment Committee conducted a sustainability tour to Uncle Ree Farm on September 9 and 10, 2022. The trip allowed attendees to observe sustainable farming practices and learn about organic farming methods. The registration deadline was September 6, 2022, and all participants were expected to register prior to the event as walk-ins were not accepted. The tour, which lasted from 1 to 6 p.m., included a farm guide, dinner on the farm, and transportation.

The tour was a success in terms of promoting sustainable practices and increasing awareness of SDG 12 (Responsible Consumption and Production). The trip encouraged participants to adopt more sustainable habits in their daily lives by demonstrating how organic farming may contribute to sustainable production patterns. Furthermore, the tour allowed for participant community building and served to reinforce the SU community's dedication to environmental sustainability. The sustainability trip to Uncle Ree Farm was a successful program that promoted SDG 12 goals. Furthermore, the event emphasizes the need to promote sustainable behaviors through education and awareness-raising initiatives, which can aid in meeting SDG 12 targets such as reducing food waste and enhancing resource efficiency.



## PROMOTION OF COMMUNITY RESILIENCE AGAINST PLASTIC POLLUTION AND CLIMATE CHANGE IN THE MEKONG RIVER BASIN



*Duration: September 2022-March 2023*

### Description:

The project entitled "Promotion of Community Resilience Against Plastic Pollution and Climate Change in the Mekong River Basin" is a collaborative effort between AIT Solutions, AIT's Entrepreneurship Center, and the United Nations Environment Programme (UNEP). It aims to reduce plastic pollution and address climate change-induced risks in targeted areas of Thailand and Vietnam. By leveraging existing initiatives, scientific expertise, international cooperation, and stakeholder engagement, the project aims to establish a network of regional experts and stakeholders focused on monitoring micro- and macroplastics in riverine environments. Additionally, it will document and share new technologies and best practices for mitigating the impacts of climate change and plastic pollution within the Mekong River basin and promoting their replication across the region.



The work includes developing informative fact sheets and infographics, creating outreach materials in English and Thai, organizing outreach campaigns and events, hosting a regional forum, integrating data and knowledge products into a management platform, and arranging side events for project visibility at national and regional conferences. Through these efforts, the project aims to enhance community resilience, foster sustainable practices, and protect the Mekong River basin from plastic pollution and the adverse effects of climate change.



## THE AIT RRC.AP PARTICIPATED AND PRESENTED IN THE 3RD GLOBAL WASTE MANAGEMENT CONFERENCE, VIRTUAL MEETING



Duration: 29-30 March 2022

### Description:

The Third Global Waste Management Conference was held on 29-30 March 2022 in virtual format with the theme "Advancing Towards Zero-Waste Cities." The Malaysian Industry-Government Group for High Technology (MIGHT) and the Confexhub Group of Malaysia organized the conference. Participants were policymakers, international experts, and global industry practitioners brought together to strategize, chart directions, and craft new blueprints to achieve specific actions, including: (i) cities in Asia defining Zero-Waste Cities principles and chart frameworks; (ii) sustainable product lifecycle policy in product design systemic process to avoid and eliminate waste and toxicity and conserve and recover all resources; (iii) local governments to establish incentives and campaigns for industry and community to source responsibly; and (iv) cities adopting green technologies in landfills and increasing the use of incinerators, among others. Dr. Guilberto Borongan and Mr. Solomon Huno of RRC.AP participated in the conference virtually.

Dr. Borongan presented one of the plenary addresses entitled "Investment Opportunities in Waste Management in ASEAN" during the opening and plenary sessions. Dr. Borongan was also privileged to moderate session 6: "Waste-To-Energy: Tackling the Waste Crisis & Meeting Climate Change Targets." Mr. Solomon Huno moderated the open forum on "Industry Leaders The Essentials of Advancing Towards Zero Waste Cities."

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no1-01.aspx>



## PUBLICATION OF "EMISSIONS OF GREENHOUSE GASES FROM MUNICIPAL SOLID WASTE MANAGEMENT SYSTEM IN HO CHI MINH CITY OF VIET NAM." URBAN SCIENCE, 2022, 6, 78.



Duration: December 2022

### Description:

R. L. Verma and G. Borongan published a peer reviewed scientific journal article entitled "Emissions of Greenhouse Gases from Municipal Solid Waste Management System in Ho Chi Minh City, Viet Nam" in Urban Science (2022, 6, 78). This article estimated emissions of Greenhouse Gases (GHGs) from the Municipal Solid Waste Management System in Ho Chi Minh City. The GHG emission data from this study will be useful to policymakers in Viet Nam in devising effective climate change mitigation policies.

<https://www.mdpi.com/2413-8851/6/4/78>



Presentation by AIT RRC.AP's Guilberto Borongan during the plenary address



Moderated Session 6: Waste-To-Energy: Tackling the Waste Crisis & Meeting Climate Change Targets





## TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACTS

In 2022, AIT organized a conference on open-source modeling of energy systems theory and applications, and applications of big earth data to carbon neutrality. The conference attracted 192 submissions from 31 countries. Collaborations over climate action also involved Bhutanese institutions with support from UNDRR, UNEP,

and UNDP (among others). Other activities included training on disaster risk, resilience assessment, planning tools, methodologies, and case studies related to climate action. Participants from Bhutan, Nepal, India, Sri Lanka, Thailand, Cambodia, Vietnam, Myanmar, Indonesia, and the Philippines took part in the training.



### ICUE 2022 INTERNATIONAL CONFERENCE ON ENERGY, ENVIRONMENT, AND CLIMATE CHANGE



*Duration: 26-28 October 2022*

#### Description:

The Department of Energy, Environment, and Climate Change of the Asian Institute of Technology (AIT) organized the ICUE 2022 International Conference on Energy, Environment, and Climate Change on 26-28 October 2022.

[\(https://ait.ac.th/2022/10/icue-2022-international-conference-on-energy-environment-and-climate-change-organized/\)](https://ait.ac.th/2022/10/icue-2022-international-conference-on-energy-environment-and-climate-change-organized/)

The event was organized in hybrid mode. Dr. Wenchao Xue from the Department's Environmental Engineering and Management program headed the Scientific Organizing Committee as its Conference Chair. The conference was inaugurated by AIT President Prof. Kazuo Yamamoto, who delivered his welcome remarks virtually via Zoom.

ICUE 2022 is the second hybrid conference organized by the department. ICUE 2020 was held at the AIT Conference Center. This year, as Covid-19 restrictions were being relaxed, it was finally held off-campus in Pattaya City. This encouraged more onsite local and international participants to join.

The conference organized two separate panel discussions "Open-Source Modeling of Energy System-Theory and Applications: IDEEA Model Application,"





and “Application of Big Earth Data in Support of the Sustainable Development Goals in Thailand” by the AIT-Earth Observation project.

Two highly informative keynote addresses were also delivered during the three-day conference. Prof. Xia Huang of Tsinghua University, Beijing gave a talk on “Anaerobic MBR: Opportunities and Challenges towards Carbon Neutrality” on the first day. Likewise, Dr. Govinda Timilsina of the Sustainability and Infrastructure Development Research Group of the World Bank asked “Would Carbon Tax be Appropriate for Developing Economies?” Delegates were also taken on a technical tour to the site of the conference’s partner organization, Chonburi Clean Energy Power Plant on the third day.

The conference attracted a total of 192 abstract submissions from 31 different countries around the globe, of which 182 were invited to submit their corresponding



full papers. A total of 88 full papers were submitted, with 76 presented at the hybrid conference in 12 different sessions, with 2 each in parallel breakout sessions. Of these, 42 were delivered onsite and 34 virtually via Zoom. Three Best Student Paper Awards, one each for categories Energy, Environment, and Climate Change were conferred on best papers and presentations.



## WASTE AND CLIMATE CHANGE (WCC): HYBRID E-LEARNING TRAINING PROGRAM ON DEVELOPING CONCEPT NOTES FOR THE GREEN CLIMATE FUND (GCF) INCLUDING VIA THE SIMPLIFIED APPROVAL PROCESS (SAP), VIRTUAL MEETING



Duration: 14 March-15 April 2022

### Description:

The AIT-RRC.AP resulted from a collaboration with the Bhutan Office of the World Wide Fund for Nature (WWF), which organized Virtual Training for Bhutanese climate action planning practitioners (National Designated Authority, staff of Direct Access Entities, Civil Society, and domestic consultancies) while piloting the recently developed eLearning course on Developing Concept Notes for the GCF Simplified Approval Process with a cohort of 35 participants from Bhutan. The capacity-building event is leveraging the eLearning materials developed by AIT RRC.AP and AIT Solutions with a focus on a subset of four modules:

**Module 1:** Strategic Linkages and Climate Change Evidence Base

**Module 2:** Non-Climate Drivers of Vulnerability, Gaps, and Barriers

**Module 4:** Formulating a Theory of Change for a SAP Concept Note

**Module 6:** Mainstreaming GCF’s Investment Criteria and Financing

The event was delivered in hybrid and self-paced format following a schedule from 14 March to 15 April 2022. The event included weekly check-in calls for clarifications and feedback on GCF concept note development insights as well as thematic advice from Bhutan’s National Environment Commission (NEC).

The training was convened as part of the capacity-building component of a Waste and Climate Change Project to

strengthen domestic capacities in developing good quality concept notes for the GCP via SAP.

The opening session held on March 14, 2022 was graced with the presence of Mr. Phento Tshering, Director of the National Environment Commission of Bhutan, Mr. Vijay Moktan, Director of WWF Bhutan country office, Dr. Naoya Tsukamoto, Director of RRC.AP, and Dr. Peter King, Senior Policy Advisor, Institute of Global Environment Strategies. All of them emphasize present and ongoing climate change challenges that require immediate and long-term solutions, with climate finance playing a critical role. Access to climate finance is a priority, and this program will assist participants in gaining access to GCF funding as well as other sources.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no1-02.aspx>



*The training opened with opening remarks by senior Staff of Bhutan’s NEC, WWF, Institute for Global and Environmental Strategies (IGES), and AIT RRC.AP*



## TRAINING PROGRAM ON BUILDING CITIES' RESILIENCE TO CLIMATE AND DISASTER RISKS, VIRTUAL MEETING



Duration: 6-8 June 2022

### Description:

The virtual training on building cities' resilience to climate and disaster risks was jointly organized by AIT RRC. AP in a consortium with the United Nations Office for Disaster Risk Reduction (UNDRR), the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), Local Governments for Sustainability (ICLEI), World Vision International (WV), and the Educational Partnerships for Innovation in Communities - Network (EPIC-N) from 6-8 June 2022. The three-day regional training was convened to strengthen the capacity of city officials in the field of climate change adaptation and disaster risk reduction and to assist them in building their cities' resilience to climate and disaster risks through integrating climate change adaptation and disaster risk reduction into wider city development plans and strategies. 430 participants registered for the training over the three days, 250 of whom joined the training globally.

The training structure and content were composed of seven mutually supportive training modules broken down

into eight sessions (delivered over three days) including a series of content presentations, group exercises, panel group presentations, and activities focusing on presenting the use of international disaster risks and resilience assessment and planning tools, approaches, methodologies, and case studies developed by AIT RRC. AP, UNDRR, UNEP, UNDP, ICLEI, World Vision, and EPIC-N.

The training formally began with a welcome address from Dr Naoya Tsukamoto, Director, AIT-RRC.AP followed by short keynote speeches of Mr Gen'ichiro Tsukada, Director of Climate Change Adaptation Office, MoEJ, Mr Marco Toscano-Rivalta, Chief of Office, UNDRR ROAP, Mr Emani Kumar, Executive Director, ICLEI South Asia Secretariat, and Dr Iyad Abumoghli, Director of the UNEP Faith for Earth Initiative.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no2-04.aspx>



Dr. Naoya Tsukamoto (Left), Mr. Gen'ichiro Tsukada (Center), Mr. Marco Toscano Rivalta (Right) delivering the welcome address and keynote speeches, respectively



## REGIONAL CLIMATE CHANGE DOWNSCALING WORKSHOP USING THE S8DS TOOL TO AID NATIONAL ADAPTATION DEVELOPMENT PLANNING; VIRTUAL MEETING



Duration: 13-14 June 2022

### Description:

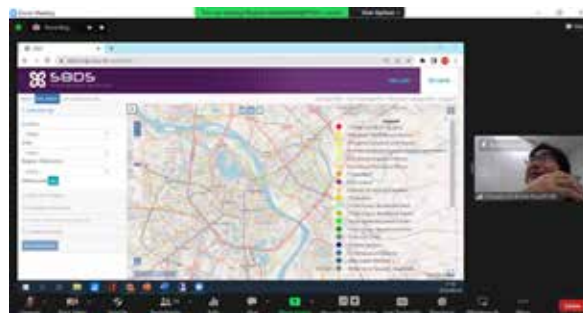
Following AIT's RRC.AP's responsibility in the region to assist climate change capacity building and research as well as the development of appropriate adaptation plans and strategies, two days of virtual training on the S8 Downscaling tool helped participants understand and manage the development of climate scenarios for their regions, particularly for those officials involved

in the National Adaptation Planning process. The training intended to help participants to understand the fundamental concept of downscaling behind the S8DS tool. It also walked participants through understanding and utilizing the S8DS tool step by step, including experience sharing from users of the S8 downscaling tool and how they plan to utilize it in the future.

A total of 25 participants from 10 different countries in Asia (Bhutan, Nepal, India, Sri Lanka, Thailand, Cambodia, Vietnam, Myanmar, Indonesia, and the Philippines) and with various affiliations (university professors, lecturers, government officials, representatives from nongovernmental organization and civil society organizations, and independent consultants) participated in the training.

The training was delivered in three sessions over two half days (13-14 June 2022). During the first session, Professor Hiroyuki Kusaka, Center for Computational Sciences at the University of Tsukuba, Japan, introduced the basic understanding of global and regional climate models along with climate projection statistical and dynamic downscaling methods, including their advantages and disadvantages. The second session was led by the current user of the S8DS tool, Mr. Arun Kanchan, PhD candidate,

Department of Urban Innovation and Sustainability, School of Environment, Resources and Development, AIT, who shared his experience of exploring the S8 downscaling tool in his research.



*Practical session led by Mr. Nakamura Shusaku during the second day of the training program*



## SPEECH ON "DEMAND, SERVICES, AND SOCIAL ASPECTS OF MITIGATION: IMPLICATIONS FOR BANGLADESH"



*Duration: June 5, 2022*

### Description:

On June 5, 2022, Center director Prof. Joyashree Roy delivered a speech as the Guest of Honour on the topic of "Demand, services, and social aspects of mitigation: Implications for Bangladesh." The event took place at the Asian Network of Youth Volunteers Society organized by One Bangladesh. Prof. Roy's speech focused on the implications of addressing demand, service provision, and social aspects in the context of climate change mitigation in Bangladesh. By exploring these interconnected

factors, she shed light on the importance of sustainable development and highlighted the relevance of Sustainable Development Goals (SDGs) 7 (Affordable and Clean Energy), 12 (Responsible Consumption and Production), and 13 (Climate Action). Prof. Roy's participation in this event aimed to inspire and engage youth volunteers in Bangladesh, fostering awareness and action towards achieving a sustainable and resilient future for the country.



## ADVANCED TRAINING ON DEVELOPING CONCEPT NOTES FOR THE GREEN CLIMATE FUND (GCF) INCLUDING VIA THE SIMPLIFIED APPROVAL PROCESS (SAP), VIRTUAL MEETING



*Duration: 27 June-21 July 2022*

### Description:

AIT RRC.AP piloted a virtual training from 27 June to 21 July 2022 in semi-self-paced format where participants were instructed to complete self-paced course modules, guided to work together with virtual collaboration tools (Miro and Slack), and convened during weekly virtual check-in calls to report and receive feedback on progress. The training aimed to strengthen know-how among officers involved in climate change adaptation project design and seeking climate finance, particularly from the GCF, and including the SAP funding modality in order to develop quality concept notes for submission and consideration.



*Participants during one of the check-in calls*

The training invited four climate change adaptation project design teams consisting of 17 participants seeking GCF funding from Cambodia, the Maldives, Nepal, and the Philippines. Participating teams were envisioned to consist of up to seven staff members, including representatives of the respective National Designated Authority (NDA) and Accredited Entities (AEs) with special attention to Direct Access Entities (DAEs), including candidate or nominated DAEs.

The training proved to be of use for participating teams to further their understanding of the GCF concept note development process for designing high-quality concept notes.

[http://www.rrcap.ait.ac.th/news/Pages/vol23no3\\_05.aspx](http://www.rrcap.ait.ac.th/news/Pages/vol23no3_05.aspx)



## WEBINAR: PROMOTING NATURE-BASED SOLUTIONS (NBS) FOR CLIMATE CHANGE – VIRTUAL MEETING



Duration: 11 August 2022

### Description:

AIT RRC.AP in 2020 organized a webinar that introduced the concept of Nature-based Solutions (NbS) and its application, including existing traditional ecological knowledge in NbS applications. On August 11, 2022, AIT's RRC.AP in collaboration with organizations working in the NbS sector from Europe and Asia organized the webinar, which showcased a series of examples and insights from completed and ongoing activities.

Dr. Naoya Tsukamoto, Director of RRC.AP, welcomed participants and speakers, followed by a keynote speech from Ms. Yuko Yoshida, Ministry of the Environment, Japan (MoEJ), and a series of presentations from panelists.

Dr. Takehito Yoshida, University of Tokyo, shared various nature-based solutions for disaster risk reduction adopted in Japan. Dr. Mario Balzan, Malta College of Arts, Science and Technology, introduced the ReNature project and reflected on lessons learned from it. The project focused on developing the capacities of relevant stakeholders to increase the application of nature-based solutions to tackle different societal challenges. The project showed that while there is at present plenty of experience with NbS applications to tackle the issues of drought and heat risks, biodiversity loss, and ecosystem degradation, there are still many sectors in the Mediterranean region with no or limited NbS applications such as water quality management, flood risk reduction,



*Webinar speakers: "Showcasing Leading Nature-Based Solution Experiences from Europe and Asia"*

transport and infrastructure, low employment, and low participation. Similarly, Dr. Norbu Wangdi, Royal Society for Protection of Nature, presented various NbS applications for sustainable forest management, biodiversity conservation, grassland management, and eco-tourism in Bhutan. Mr. Joost Noordermeer, Witteveen+Bos, shared lessons learned from ecological restoration activities in Mangrove ecosystems in Demak, Indonesia. Lastly, Mr. Raphael Glemet, International Union for Conservation of Nature, shared four examples of NbS from Bangladesh, Bhutan, India, and Nepal.

The two-hour-long webinar was attended by 165 participants from 32 countries.

Weblink:

[http://www.rrcap.ait.ac.th/news/Pages/vol23no3\\_04.aspx](http://www.rrcap.ait.ac.th/news/Pages/vol23no3_04.aspx)



## KEYNOTE ADDRESS ON "DEMAND-SIDE CLIMATE SOLUTIONS: SHIFTING RESPONSIBILITIES TO THE PUBLIC OR EMPOWERING THE PUBLIC?"



Duration: June 5, 2022

### Description:

Center director Prof. Joyashree Roy delivered an insightful keynote address on "Demand-side Climate Solutions: Shifting Responsibilities to the Public or Empowering the Public?" at the 9th International Conference on Environment and Future Energy Systems (ICEF) Annual Meeting held in Tokyo. Her address focused on the importance of addressing the demand side of climate solutions, including the role of public engagement and empowerment in promoting sustainable lifestyles

and behaviors. Prof. Roy emphasized the need for a collaborative approach involving all stakeholders, including policymakers, businesses, and the public in driving the transition to a low-carbon economy. The conference provided a platform for sharing knowledge and best practices in sustainable energy systems, highlighting the importance of international cooperation in addressing global challenges related to climate change and energy sustainability.



## WEBINAR: PROMOTING NATURE-BASED SOLUTIONS (NBS) FOR CLIMATE CHANGE – VIRTUAL MEETING



Duration: 27 September 2022

### Description:

AIT RRC.AP successfully convened a webinar on climate finance inviting experts to discuss their experience in accessing finance for climate change adaptation and the necessity to work with local actors to address the impacts of climate change while also noting the challenges involved in locally-led adaptation.

The webinar formally opened with a welcome address by Dr. Guilberto Borongan, Director, RRC.AP followed by opening remarks by Ms. Yuko Yoshida, Deputy Director of the Climate Change Adaptation Office, Ministry of the Environment Japan (MoEJ).

In her keynote presentation, Ms. May Thazin Aung, Climate Finance Researcher, International Institute for Environment and Development (IIED), informed the audience about the locally-led adaptation principles that were launched in January 2021 at the Climate Adaptation Summit. This was followed by a panel discussion with climate adaptation experts from Save the Children and the Thailand Environment Institute on their experience of supporting community-led adaptation. Drawing on research as well as previous and ongoing projects in Asia, the Pacific, and Africa, the discussion



Webinar speakers: "Showcasing Leading Nature-Based Solution Experiences from Europe and Asia"

shed light on examples, challenges, and good practices in bridging access to finance via capacity building, flexible financing, managing climate change adaptation projects, and collaboration for co-finance and co-benefits.

The 90 minutes long webinar was hosted on 27 September 2022 and was attended by 86 participants from 21 countries.

Weblink:

[http://www.rrcap.ait.ac.th/news/Pages/vol23no3\\_01.aspx](http://www.rrcap.ait.ac.th/news/Pages/vol23no3_01.aspx)



## MENTORING CLIMATE CHANGE ADAPTATION PROJECT DEVELOPMENT WITH CAMBODIA'S NATIONAL COMMITTEE FOR SUB-NATIONAL DEMOCRATIC DEVELOPMENT SECRETARIAT (NCCDS) – VIRTUAL MEETING



Duration: 9 December 2022

### Description:

The AIT Regional Resource Centre for Asia and the Pacific (AIT RRC.AP) convened a virtual mentoring meeting with the National Committee for Sub-National Democratic Development Secretariat (NCCDS), Cambodia on 9 December 2022. NCCDS is working towards pursuing funding from the Green Climate Fund to support climate resilience-building activities in Cambodian communities.

The mentoring team included Dr. Keith Bettinger, climate change adaptation expert, Dr. Ramesh Soysa, AIT Alumnus with expertise in GCF Readiness Support, Dr. Guilberto Borongan, Director of RRC.AP, and the climate change team from RRC.AP. Four staff members of NCCDS attended the meeting.

During the call, the NCCDS team provided an update on progress on a climate change adaptation concept note focused on supporting community resilience following a series of activities, including during previous virtual training activities by RRC.AP, designed to complete a draft concept



Webinar speakers: "Showcasing Leading Nature-Based Solution Experiences from Europe and Asia"

note. Following a discussion on the climate rationale and theory of change in the draft concept note, expert feedback focused on strengthening and refining the project's impact chain analysis and problem tree aspects in order to strengthen the concept note. NCCDS team will prepare to communicate the concept note to GCF in consultation with RRC.AP.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no4-02.aspx>



## REGIONAL TRAINING ON FLOOD FORECASTING TOOL FOR CLIMATE ADAPTATION, 13-14 DECEMBER 2022, PATHUM THANI, THAILAND



Duration: 13-14 December 2022

### Description:

The AIT's RRC.AP proposed introducing a flood forecasting tool called "FloodS" developed by Japanese private company Hitachi with the support of the Ministry of the Environment, Japan, in the region. The introduction of this tool is due to the requirement of climate adaptation in the region to forecast floods and their expected impact for appropriate adaptation strategies as a part of a larger climate adaptation plan in the region.

The knowledge drawn from the deployment of the tool will help countries in the implementation of an integrated climate-resilient flood risk management approach and improve their existing capacity to understand the potential impacts of climate change on flooding and flood risk management and enhance the resilience of vulnerable communities. In addition, it will help to align adaptation measures with the impact of climate change on flood risk and flood risk management across sectors and wider government policy. The introduction of this tool will involve advocacy through communication via emails for respective country government focal and other relevant agencies working in the climate adaptation and water sector and then planning



Figure 1: Landing page of floodS tool



Figure 2: RRC.AP Staff attending the floodS Training lead by Mr. Tomonori Orita

for training in either virtual or face-to-face mode depending on the situation.

Since this is a newly-developed tool, the Ministry of the Environment, Japan and Hitachi provided training as a part of the training of the trainers (ToT) to the staff of RRC.AP to build their capacity so that the team can train people in the region. The training included an introduction to climate adaptation and the relevance of the FloodS tool following the practical use of the tool depicting a real-time situation.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no4-01.aspx>



Figure 3: Using floodS tool during the training- session lead by Hitachi team, Japan



## WORKSHOP ON SCIENCE OF PRICING ECOSYSTEM SERVICES



Duration: 13-16 June 2022

### Description:

A workshop titled "Science of Pricing Ecosystem Services" was organized on June 13-16, 2022 by SMARTS in collaboration with APN and SAFE. The workshop aimed to delve into the scientific aspects of valuing and pricing ecosystem services, emphasizing their importance for sustainable development. Through this event, participants explored effective strategies for conserving and restoring ecosystem services by understanding their economic value. The workshop's focus aligned with Sustainable Development Goals (SDGs) 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land). For more information about the workshop, including its agenda and details, see:

Weblink:

<https://www.smartscenter.org/post/science-of-pricing-ecosystem-services-workshop>



## VIRTUAL SIDE EVENT OF THE THIRD GLOBAL CONFERENCE ON STRENGTHENING SYNERGIES BETWEEN THE PARIS AGREEMENT AND THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT



Duration: 20-21 July 2022

### Description:

Center director Prof. Joyashree Roy served as a panelist at the Virtual Side Event of the Third Global Conference on Strengthening Synergies between the Paris Agreement and the 2030 Agenda for Sustainable Development. The event took place on 20-21 July 2022 in Tokyo. Prof. Roy's participation highlighted the intersection between climate action and the Sustainable Development Goals (SDGs), particularly SDG 13 (Climate Action). As a panelist, she

shared insights, expertise, and perspectives on how the Paris Agreement and the 2030 Agenda can work together to address climate change and promote sustainable development worldwide. The virtual nature of the event allowed for global participation and knowledge exchange among stakeholders committed to advancing climate action and achieving the SDGs.



## PARTICIPATION OF THE DIRECTOR AND POST-DOCTORAL RESEARCHER, SMARTS CENTER, IN MULTIPLE COP27 EVENTS AS SPEAKER, MODERATOR, AND PANELIST



Duration: 7-18 November 2022

### Description:

SMARTS Center director Prof. Joyashree Roy and post-doc Dr Shreya spoke on demand-side climate mitigation solutions at the IPCC Pavillion (Science for Climate Action). The Center director also spoke at the EDITS side event organized at COP27 to discuss innovations for energy demand reduction and decarbonization of the urban environment and the construction sector as well as pathways towards a net-zero society and moderated the RITE IIASA side event at COP27 entitled "High Wellbeing with Low Energy Demand towards a Modern Net-zero Society." She also delivered talk in the "Meeting Multiple Policy Targets of Development and Mitigating Global Crises through Demand Solutions" session, discussing climate strategies and the importance of including women in climate policy planning and implementation at the 10 New Insights in Climate Science 2022 and the COP27 Agenda event at the Pathways to 1.5 pavilion. She was a panelist at the Singapore Pavillion on the Asian Cities event, presenting the principles of climate resilient development, explaining why they are important in Asian cities, and discussing how they can be achieved through policies and the involvement of multiple municipal agencies and stakeholders. She also spoke at a side event at the German Pavilion to show how future transformation can be managed without harming future generations. Finally, she moderated a session on Climate Justice and Gender at the IPCC Pavillion.

Weblink:

<https://www.smartscenter.org/post/cop27>  
<https://www.youtube.com/watch?v=Vz8jrkRcsk>  
<https://iiasa.ac.at/events/nov-2022/edits-at-unfccc-cop27-high-services-with-low-energy-and-resource-demand-for-low>  
<https://iiasa.ac.at/events/nov-2022/rite-iiasa-side-event-on-edits-at-unfccc-cop27>



## AIT YOUTH ENERGY ACADEMY (YEA) ORGANIZED BY THE REGIONAL RESOURCE CENTER FOR ASIA AND PACIFIC



Duration: 11 October 2022

### Description:

The YEA was a seven-day intensive programme focused on decentralized renewable energy (DRE) approaches to address some of the climate, energy access, and developmental challenges faced by communities. A variety of interactive sessions included do-it-together practical sessions to build simple renewable energy systems. YEA aimed to foster leadership, entrepreneurship, and a can-

do attitude while equipping young people with tools for developing renewable energy applications for communities. Center director Prof. Joyashree Roy addressed participants from various countries at AIT's Youth Energy Academy organized by the RRCP on 11 October 2022.

<https://ait.ac.th/event/a-virtual-youth-energy-academy-yea>



## CONSERVE AND SUSTAINABLY USE THE OCEANS, SEA AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

2022 saw AIT continue with efforts to deal with pollution in the Mekong Delta Basins, including from plastic waste, in collaboration with Google, including the use of digital tools, machine learning models, and geospatial techniques. A similar effort aimed to reduce plastic waste in Indonesian waterways. With support

from Japan and UNEP, AIT also organized training on mercury monitoring. Another joint event held in India addressed the ability of coastal ecosystems to deal with climate change. In collaboration with the Philippines and Lao PDR, another initiative aimed to address the issue of marine plastic debris.



### AIT GEOINFORMATICS CENTER DEVELOPS A REAL-TIME FLOATING PLASTIC LITTER IDENTIFICATION TECHNOLOGY FOR THE MEKONG RIVER USING AI-ENABLED SMART CCTV SYSTEMS



*Duration:*

**Description:**

The Mekong River, a vital lifeline for millions of people in Southeast Asia, is facing increasing threats from plastic pollution. The river, known as the “Mother of Water,” is being inundated with plastic waste as it flows through China, Myanmar, Laos, Thailand, Cambodia, and Vietnam. This pollution not only poses risks to human health and habitats but also impacts biodiversity and contributes to climate change.

To address this issue, the UN Environment Programme (UNEP) collaborated with the Geoinformatics Center (GIC) of the Asian Institute of Technology (AIT) and Google on the CounterMEASURE II Project. The project leveraged citizen science and artificial intelligence (AI) to understand the extent of plastic pollution in the Mekong River.

Through the use of digital tools, machine learning models, and geospatial techniques, the AIT-GIC team mapped plastic leakage hotspots and identified the pathways through which plastic waste enters the river. The project also involved the active participation of citizen scientists who contributed annotated images to enhance the accuracy of the AI model.

The successful implementation of the project led to the development of a detailed digital map of plastic pollution in the Mekong River. The AIT-GIC researchers utilized smart



Closed Circuit Television (CCTV) systems powered by solar panels to detect and monitor floating plastics in real-time. By combining various data sources and applying advanced deep learning methods, they identified significant plastic leakage hotspots along the riverbanks.

The findings from this research are crucial for informing policy decisions and actions to combat plastic pollution and ensure a plastic-free future for rivers like the Mekong. The efforts of the AIT-GIC team in collaboration with UNEP and Google demonstrate the potential of using innovative technologies and citizen engagement to tackle the global issue of plastic pollution in our waterways.

🌐 <https://ait.ac.th/2022/07/eyes-on-the-mekong-to-combat-plastic-pollution>



## RESEARCH PROJECT ON A SYSTEMS ANALYSIS APPROACH TO REDUCE PLASTIC WASTE IN INDONESIAN SOCIETY (PISCES)



*Duration: January 2022-June 2024*

### Description:

The project titled "A Systems Analysis Approach to Reduce Plastic Waste in Indonesian Society (PISCES)" aims to create "hope spots" in Indonesia's battle against plastic waste with the help of an international multi-disciplinary team offering multiple work packages. The aim of the work package designed for SMARTS-SERD@AIT is to: (i) estimate economic costs and benefits for municipalities focusing mainly on drainage systems and the impact of plastic debris on their productivity and on damage to engineered infrastructures in cities (e.g. engineered storm water and sewerage drainage systems); (ii) identify the chain of actors addressing plastic impacts through alternative instruments (regulatory, incentive based, non-economic, etc. including links to social and cultural issues; and (iii) determine the economic cost burden through valuation of total welfare loss using a production function approach. The team from the Center working for this project participated and presented at the PISCES Co-design Workshop on Plastic Waste with other global and regional partners in Banyuwangi, Indonesia, November 27- December 2, 2022

Weblink:

<https://www.piscespartnership.orghttps://www.smartscenter.org/copy-of-research-sponsored-projects-1>

<https://www.frontiersin.org/articles/10.3389/fclim.2022.1007780/full>



## THE AIT RRC.AP ORGANIZED A TRAINING PROGRAM ON NATIONAL MERCURY MONITORING, PATHUM THANI, THAILAND



*Duration: 6-8 December 2022*

### Description:

The AIT RRC.AP organized a training program titled "Organizing a Training Programme on National Mercury Monitoring" on December 6-8, 2022, at the AIT Conference Centre. The training program is the second in a series of training programs slated under the United Nations Environment Programme (UNEP)-implemented and Japan-funded project titled "Project for Promoting the Minamata Convention on Mercury" by making the most of Japan's knowledge and experience. The training program was conducted to familiarize participants with the training packages and templates developed during the earlier

phase of the project as well as help participants with the necessary resources for developing and facilitating local training programs on accurate mercury monitoring and analyses in their country. The program addressed the various monitoring needs and priorities of each laboratory by providing methodologies and skills for mercury monitoring in various environmental and biological media. Supplemental technical information and a hands-on demonstration of mercury analyses deepening participants' understanding of mercury monitoring and quality data collection and analysis for better science-based policy-making and implementation.



A total of 21 country delegates from 10 countries in Asia and the Pacific participated in the training program. Six resource persons, including mercury monitoring experts from Japan (IDEA Consultants Inc.), South Africa (South Africa Weather Service), Myanmar (Environmental Compliance Consultancy Co., Ltd.) and Thailand (IDEA Consultants Inc.) were invited to participate in the training.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no4-03.aspx>



## SESSION ON "SUSTAINING THE COASTAL ECOSYSTEM IN THE FACE OF CLIMATE CHANGE" AT THE EVENT ORGANIZED BY THE US CONSULATE, KOLKATA AND ASIAN CONFLUENCE



Duration: November 21-22, 2022

### Description:

During the event organized by the US consulate and Asian Confluence and held in Kolkata on November 21-22, 2022, Center director Prof. Joyashree Roy took on the role of session chair for the discussion on "Sustaining the Coastal Ecosystem in the Face of Climate Change." This session focused on the critical challenges posed by climate change to coastal ecosystems and explored strategies to ensure their long-term sustainability. Prof. Roy facilitated

insightful conversations among experts, policymakers, and stakeholders, highlighting the importance of addressing Sustainable Development Goals (SDGs) 3 (Good Health and Well-being), 8 (Decent Work and Economic Growth), 13 (Climate Action), 14 (Life Below Water), and 15 (Life on Land). Through this research, teaching, outreach, and public engagement effort, the session aimed to generate innovative ideas and solutions for coastal ecosystem preservation.



## ERIA AND AIT LAUNCHED A PROJECT ON PLASTIC LEAKAGE PREVENTION FROM FACTORIES AND THE INFORMAL RECYCLING SECTOR



Duration: November 21-22, 2022

### Description:

The Regional Resource Centre for Asia and the Pacific (RRC.AP) at the Asian Institute of Technology (AIT) organized a consultation meeting to initiate a project funded by the Regional Knowledge Centre for Marine Plastic Debris. This project, in collaboration with Thailand, the Philippines, and Lao PDR, aims to develop technical guidelines for preventing plastic and resin pellet leakage from factories and the informal recycling sector in ASEAN cities. The objective is to disseminate lessons learned and build capacity in the region to prevent micro- and macroplastics from entering the marine environment. The guidelines will be based on best management practices that are socially acceptable, technologically feasible, and economically viable. The meeting discussed the project's scope and work plan with collaborators and stakeholders, ensuring smooth project collaboration and successful implementation at the city level. The project's final recommendations are expected to contribute as technical input to the international legally-



binding agreement to control plastic pollution by 2024. Feedback from participants emphasized the need for clear stakeholder categorization, alignment with existing frameworks and national action plans, and the importance of a robust communication plan for effective guideline utilization by government entities and other end-users.

<https://rkcmpd-eria.org/eria-and-ait-launched-a-project-on-plastic-leakage-prevention-from-factories-and-informal-recycling-sector>



## PROTECT, RESTORE AND PROMOTE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS, SUSTAINABLY MANAGE FORESTS, COMBAT DESERTIFICATION, AND HALT AND REVERSE LAND DEGRADATION AND HALT BIODIVERSITY LOSS

International Day of Forests 2022 was marked at AIT by a poetry competition won by contributions from Kenya, Malaysia, and Nepal. AIT also assisted the Bangladesh government by delivering a professional training program on collaborative forest management for sustainable landscape restoration. National Wildlife Day

2022 was marked by an AIT workshop on forest carbon stocks and offsetting emissions, wildlife conservation, and ecosystem preservation. World Environment Day 2022 was celebrated at AIT through a campaign highlighting the climate, nature, chemicals and pollution.



### CELEBRATION OF THE INTERNATIONAL DAY OF FORESTS 2023 (FORESTS SPEAK) THROUGH GLOBAL POETRY COMPETITION



*Duration: 21 March 2022*

#### Description:

Faculty members and students of the Natural Resources Management of the Department of Development and Sustainability at the Asian Institute of Technology celebrated International Day of Forests 2022 by organizing a poetry competition. The theme for the competition was "Forest restoration: A path to recovery and well-being." The competition was open to everyone and aimed to raise awareness of the importance of forests and their restoration. Participants were required to submit their poems in English, and the entries were judged by a panel of experts. The winners were announced on March 21, 2022, the International Day of Forests.

First prize was awarded to Lillian Wangari from Kenya for her poem "The Heart of a Forest." Second prize was awarded to Muhammad Azizi Bin Mohd Zaini from Malaysia for his poem "The Woodsman." Third prize was awarded to Bishal Tamang from Nepal for his poem "Hope of a Forest."

Weblink:

<https://ait.ac.th/2022/04/ait-commemorates-international-day-of-forests-2022-through-a-poetry-competition-2>





## PROFESSIONAL TRAINING PROGRAM ON COLLABORATIVE FOREST MANAGEMENT (CFM) FOR SUSTAINABLE LANDSCAPE RESTORATION



*Duration: 12 May-10 August 2022*

### Description:

The Sustainable Forest & Livelihood (SUFAL) Project of the Bangladesh Forest Department (BFD) under the Ministry of Environment, Forests and Climate Change (MoEFCC), Government of the People's Republic of Bangladesh engaged the Asian Institute of Technology (AIT), Thailand for designing and coordinating a professional training program on "Collaborative Forest Management (CFM) for Sustainable Landscape Restoration," in which the key focus was on transfer of knowledge, attitude, skills, and efficiency (KASE) among the Forestry Officials of Bangladesh in the area of CFM and its implication for landscape restoration. This training program was designed to upgrade forestry officials in their institutional and managerial capacity development on institutionalizing CFM activities, restoration of degraded forests, coastal green belt and field infrastructure, increasing access to alternative income generating activities through CFM based restoration programs, and achieving sustainability. The three-month long program included seven different modules, which were delivered through classroom sessions, hands-on activities, exposure visits to relevant project sites and communities as well as departments and organizations, group work and feedback, and finally individual research studies and action plan preparation. The participants were the forestry officials from Bangladesh who are contributing to the SUFAL project in different capacities, roles, and responsibilities. The program was coordinated by AIT Extension and was held at AIT's Main Campus in Pathum Thani. The relevant field study visits were conducted in various provinces and covered various management practices found in different forest ecosystems in eastern, southern, and northern Thailand.

Weblink:

<https://extension.ait.ac.th/news/collaborative-forest-management-sustainable-landscape-restoration>





## COUNTER MEASURE II: ACTIVITY 5: SUPPORTING OUTREACH AND KNOWLEDGE MANAGEMENT TO PROMOTE TECHNOLOGIES AND PRACTICES FOR CLIMATE RESILIENCE IN RIVER BASIN COMMUNITIES AND THE PROMOTION OF COMMUNITY RESILIENCE AGAINST PLASTIC POLLUTION AND CLIMATE CHANGE IN THE MEKONG RIVER BASIN



*Duration: January-June 2022*

### Description:

AIT Solutions and AIT's Entrepreneurship Center collaborated on Activity 5 of the Counter Measure II Project funded by the United Nations Environment Programme (UNEP). This joint effort focuses on supporting outreach and knowledge management to promote technologies and practices for climate resilience in river basin communities. The scope of the project includes developing fact sheets

and infographics, creating outreach materials for target and other riverine communities, designing and organizing outreach campaigns and events, organizing a regional forum, incorporating data and knowledge products into a management platform, and arranging side events to enhance project visibility at national and regional conferences.



## TALK ON "MANAGING AGRO-ECOSYSTEMS UNDER CLIMATE CHANGE" AT THE INTERNATIONAL CONFERENCE ON CLIMATE CHANGE AND FOOD SECURITY IN SOUTH ASIA



*Duration: May 18-20, 2022*

### Description:

SMARTS Center director Prof. Joyashree Roy delivered an engaging talk on "Managing Agro-ecosystems under Climate Change" at the International Conference on Climate Change and Food Security in South Asia. The conference, which was held in Dhaka, Bangladesh on May 18-20, 2022, was organized by Dhaka University in collaboration with the World Meteorological Organization (WMO) and the Food and Agriculture Organization (FAO). Prof. Roy's presentation shed light on challenges and strategies for managing agro-ecosystems in the face of climate change. The talk aimed to raise awareness and

provide valuable insights to address the interconnected issues of climate change, food security, and sustainable development. By sharing expertise and knowledge, the conference contributed to SDGs related to zero hunger (SDG 2), climate action (SDG 13), no poverty (SDG 1), good health and well-being (SDG 3), affordable and clean energy (SDG 7), decent work and economic growth (SDG 8), and life on land (SDG 15). This talk served as an important outreach and public engagement effort, promoting informed dialogue and collaborative action for a resilient and sustainable future.



## AIT WILDLIFE AND ECOSYSTEM CONSERVATION WORKSHOP CONDUCTED



Duration: 6 October 2022

### Description:

The Asian Institute of Technology (AIT) organized a workshop to raise awareness about United Nations Sustainable Development Goal 15: Life on Land. The Office of Sustainable Campus (OSC) at AIT established as part of the Sustainability Task Force aims to integrate sustainability into all its operations and community members' daily activities. The workshop showcased the richness of AIT's ecosystem and featured talks from experts. A photo competition was also held on National Wildlife Day, with winners announced during the event. AIT President Prof. Kazuo Yamamoto commended OSC for organizing the workshop and expressed AIT's commitment to becoming a sustainable campus. Presentations were made on topics such as forest carbon stocks and offsetting emissions, wildlife conservation, and ecosystem preservation. The workshop highlighted the importance of protecting terrestrial ecosystems, managing



forests sustainably, and combating land degradation and biodiversity loss, as outlined in SDG 15. The winners of the wildlife and ecosystem photo contest were also recognized during the workshop.

Weblink:

<https://ait.ac.th/2022/10/ait-wildlife-and-ecosystem-conservation-workshop-conducted>



## WORLD ENVIRONMENT DAY (WED) 2022 CELEBRATION AT ASIAN INSTITUTE OF TECHNOLOGY, PATHUM THANI, THAILAND



Duration: 2 June 2022

### Description:

World Environment Day (WED) 2022 was celebrated at the Asian Institute of Technology, Pathum Thani, Thailand on 2 June 2022. With its campaign entitled #OnlyOneEarth, this year's World Environment Day focuses on three major themes: Climate, Nature, and Chemicals & Pollution. It calls for collective, transformative action on a global scale to celebrate, protect, and restore our planet. Truly transformative options towards sustainability need to be available, affordable, and attractive for people to make better daily decisions. Sharing the same advocacy, the Regional Resource Centre for Asia and the Pacific (RRC.AP) organized a World Environment Day (WED) celebration to stimulate and share sustainable practices among the AIT Community.

The WED celebration also paved a way for RRC.AP to partner with the School of Environment, Resource and Development (SERD), which communicated their recent research and inventions on sustainability, as well as the Office of Sustainable Campus (OSC), which campaigned for volunteers to join their team and individuals to contribute to this transformation.

The opening speeches, spearheaded by AIT President Dr. Eden Y. Woon, reaffirmed AIT's goal of becoming a sustainable campus within the next five years; Professor Vilas Nitivattananon, Dean of SERD, stressed the relevance of research and academia in addressing current environmental



concerns, while Dr. Naoya Tsukamoto, Director of RRC.AP, urged everyone to live responsibly and help heal and preserve the planet for our future generations. The event featured a Sustainable Bazar, where various AIT and external vendors offered sustainable foods and eco-friendly products through green shopping practices. Fashion and photography competitions were launched to raise awareness of textile waste and showcase climate change and biodiversity, respectively. Workshops were conducted to promote environment-friendly living, such as recycling t-shirts into shopping bags and zero-waste vegan skincare. A model sustainable kitchen and threats to biodiversity were also displayed as part of the exhibition.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no2-05.aspx>



## PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT, PROVIDE ACCESS TO JUSTICE FOR ALL AND BUILD EFFECTIVE, ACCOUNTABLE AND INCLUSIVE INSTITUTIONS AT ALL LEVELS

2022 witnessed active engagement between AIT, the Bangladesh government, and the World Food Programme designed to assess the impact of relief activities on the Rohingya community and conditions in refugee camps, including institutionally addressing gender, food security, inequality, vulnerability, and

excluded groups. AIT also delivered a training course on environmental sustainability in Kolkata emphasizing vital connections between environmental sustainability and peace, justice, and strong institutions, with the aim of inspiring students to become agents of change and contribute to advancing the aims of SDG16.



### IMPACT ASSESSMENT REPORT ON FFA/DRR ACTIVITIES IN ROHINGYA REFUGEE CAMPS – PROF. MOKBUL MORSHED AHMAD IN COLLABORATION WITH AIT EXTENSION PUBLISHED A REPORT ON ROHINGYA REFUGEES IN BANGLADESH



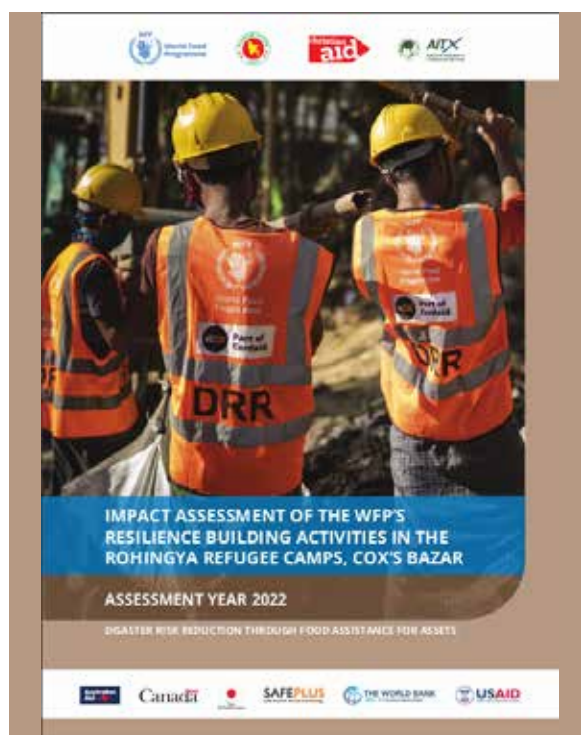
*Duration: 20 November 2022*

#### Description:

The World Food Programme (WFP) initiated Food Assistance for Asset (FFA) and Disaster Risk Reduction (DRR) activities. The WFP and partners work to increase the camp's capacity to withstand inclement weather conditions and mitigate key risk factors, including deforestation-induced erosion of topsoil, which causes landslides, damage to shelters, slippery access points, and overflowing drains and canals. AIT Extension, Asian Institute of Technology, is taking up the assessment of the impact of services such as infrastructure, feedback mechanisms, and Cash for Work activities taking place through the WFP's cooperating partner organization. This assessment report will reflect the impact of WFP-DRR activities on the Rohingya community and will inspire other agencies in designing further action plans for disaster risk reduction in the refugee camps.

#### Weblink

<https://ait.ac.th/2022/11/prof-mokbul-morshed-ahmad-in-collaboration-with-ait-extension-has-published-a-report-on-rohingya-refugees-in-bangladesh>





## IMPACT ASSESSMENT OF WFP'S RESILIENCE BUILDING ACTIVITIES IN ROHINGYA REFUGEE CAMPS, COX'S BAZAR



Duration: 1 March-31 October 2022

### Description:

Since 25 August 2017, Rohingya Refugees have taken shelter under the humanitarian initiatives of the Government of Bangladesh in several refugee camps in south-eastern Bangladesh. WFP, in collaboration with CP members such as CAID, ACTED/HELVETAS, Cordaid, and CARE Bangladesh have been working in the refugee camps in Teknaf and Ukhiya sub-districts Cox Bazar District. According to UN-WFP (30 June 2021), an estimated 890,276 Rohingya refugees comprise 189,901 households. Among several challenges, one of the major problems faced by the refugees are poor infrastructure, over-congestion, and steep and slippery slopes along with low-lying, flood-prone areas, all of which have created highly vulnerable living conditions. These challenges also include poor or limited humanitarian services such as a significant shortage of drainage facilities.

The overall purpose of this assessment was to examine the benefits of the WFP's FFA/DRR projects to the Rohingya refugees living in the two sub-districts of south-eastern Bangladesh. The assessment also focused on identifying the gaps that need to be addressed by the relevant agencies for future planning and intervention.

The United Nations World Food Programme (WFP), engaged with its partners and co-facilitated by Christian Aid (CAID) in collaboration with AIT Extension, a Thailand-based external assessment firm of the Asian Institute of Technology (AIT), hereinafter referred to as the "consulting team," conducted this Impact Assessment study.

This report focuses on the effect of Rohingya camps infrastructure, refugees' living standard, and other services (capacity building, CfW [Cash for Work], reforestation). It also focuses on the assessment by the beneficiaries, key stakeholders, and other partners, who have highlighted the



objectives and assessed nine key issues including gender, food security, inequality, vulnerability, and excluded groups. The key finding of this assessment is that beneficiaries are largely satisfied with the quality and maintenance of infrastructures. The effects of the interventions have also reduced the risks from disasters such as landslides, waterlogging, and cyclones. The CfW project was also found to be very helpful in providing food security and generating other assets for beneficiaries. The benefits of the project have also reached the most marginalized, including the disabled. Many other initiatives have been taken, and more work is in progress. Beneficiaries suggested continuation and better planning for future interventions through infrastructure development. They also strongly urged the continuation of CfW projects, including future interventions and projects for further development and interventions related to Food Assistance for Assets (FFA) or Disaster Risk Reduction (DRR) by the World Food Programme in the Rohingya Camps in Cox's Bazar.

Weblink:

<https://dds.ait.ac.th/news/2023/01/04/prof-mokbul-morshed-ahmad-in-collaboration-with-ait-has-published-a-report-on-rohingya-refugees-in-bangladesh>



## COURSE ON ENVIRONMENTAL SUSTAINABILITY



Duration: 7-16 June 2022

### Description:

Prof. Joyashree Roy, a faculty member at the Asian Institute of Technology (AIT), delivered a training course on Environmental Sustainability as a Guest Speaker at Vijoygarh Jyotish Ray College in Kolkata. The course emphasized the vital connection between environmental sustainability and SDG16 (Peace, Justice, and Strong Institutions). By highlighting the importance of sustainable practices, the training aimed to foster peaceful and inclusive societies through the promotion

of responsible environmental stewardship. Professor Roy's expertise shed light on the significance of building strong institutions and fostering justice in addressing environmental challenges, such as climate change and resource depletion. The course aimed to inspire students to become agents of change, contributing to a more sustainable future while advancing peace, justice, and strong institutions in line with SDG16.



## STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

In 2022, AIT partnered with UNDP, UNESCO and UNOOSA as well as global international organizations such as the International Union for Conservation of Nature and the International Telecommunication Union. AIT convened key intergovernmental meetings of the Malé Declaration on Control and Prevention of Air Pollution, and the Acid Deposition Monitoring Network in East Asia (among others). A collaboration seminar series to promote research between China and Thailand

connected partners probing solutions for water, sanitation and climate change challenges. AIT also jointly organized a capacity-building workshop on air quality management, drawing 45 participants from 17 countries, including 9 member countries of the ASEAN Haze Agreement. Other collaborative initiatives addressed acid deposition monitoring, identifying priorities for action, promoting dialogue, considering common positions, and promoting collaborative approaches to development challenges.



### UNDP AND AIT JOIN HANDS TO PROMOTE RESEARCH ON SUSTAINABLE DEVELOPMENT GOALS



*Duration: April 2022 – April 2027*

**Description:**

The United Nations Development Programme (UNDP) and the Asian Institute of Technology (AIT) signed a memorandum of understanding (MoU) on 19 April 2022 to raise awareness and enhance knowledge of the SDGs and of their status in Thailand among the Thai public through research, publications, and seminars. The signing of the MoU was a crucial step towards long-term collaboration between the two entities over facilitating interactions with other academic institutions and development actors in Thailand and beyond to exchange knowledge and experience on SDG-related work and issues with a view to accelerating Thailand's progress towards achieving the SDGs.

Weblink:

<https://www.undp.org/thailand/press-releases/undp-and-ait-join-hands-promote-research-sustainable-development-goals>





## ASIAN INSTITUTE OF TECHNOLOGY AND IUCN FORGE PARTNERSHIP FOR JOINT RESEARCH AND RESOURCE SHARING



Duration: 16 December 2022-December 2027

### Description:

The Asian Institute of Technology (AIT) and the International Union for Conservation of Nature (IUCN) signed a partnership Memorandum of Understanding (MoU) on 16 December 2022, providing a general framework for identifying specific areas of collaboration, joint activities and projects in the next five years. Potential areas of collaboration between AIT and IUCN include exchange of staff and experts; joint research in the thematic areas of mutual interest; exchange of scientific and exhibition materials; joint academic activities such as seminars, conferences, exhibition; and internship opportunities for AIT students. The collaboration between AIT and IUCN will lead to progress not only in conservation but more broadly towards attaining the Sustainable Development Goals.

Weblink:

<https://www.iucn.org/news/202212/asian-institute-technology-and-iucn-forge-partnership-joint-research-and-resource>



## AIT HOSTED STAKEHOLDERS FROM ITU MEMBER STATES (MALAYSIA, INDONESIA, THE PHILIPPINES, AND THAILAND) FOR A STUDY TOUR OF AIT ON THE THEME OF ARTIFICIAL INTELLIGENCE (AI) AND POTENTIAL GENDER AND SOCIAL BIASES



Duration: May 2022 – December 2022

### Description:

To promote a regional and international digital coalition for achieving multiple SDGs, in 2022, AIT committed to work with the International Telecommunication Union (ITU) – Regional Office for Asia and the Pacific. In May, AIT hosted relevant stakeholders from ITU member states (Malaysia, Indonesia, the Philippines, and Thailand) for a study tour of AIT on the theme of Artificial Intelligence (AI) and Potential Gender and Social Biases. AIT successfully submitted two Pledges as part of the Partner to Connect (P2C) Digital Coalition, which is envisioned as a leadership-level platform to engage all stakeholders. The platform will support the implementation of the United Nations Secretary-General's (UNSG) Roadmap for Digital Cooperation and the UNSG's report titled Our Common Agenda in close collaboration with the Office of the Secretary-General's Envoy on Technology. Along with hundreds of stakeholders across the world, AIT pledges to support the development and empowerment of communities in Least-Developed Countries (LDCs) and Landlocked Developing Countries (LLDCs) by conducting relevant research and education.



Weblink:

<https://www.itu.int/itu-d/sites/partner2connect/pledges/progress-report-2022-12>



## THE ASIAN INSTITUTE OF TECHNOLOGY (AIT) SIGNS AGREEMENT TO BECOME A UN-SPIDER REGIONAL SUPPORT OFFICE



*Duration: April 2022-April 2027*

### Description:

The Asian Institute of Technology (AIT), Thailand, signed an agreement in April 2023 with the United Nations Office for Outer Space Affairs to become a Regional Support Office of the UN-SPIDER program. The partnership proposal with the Asian Institute of Technology (AIT), Thailand results from UN-SPIDER's various engagements with AIT's Geoinformatics Center. These include SPIDER's participation in the training programs organized by AIT/GIC for the countries in Asia and the Pacific, AIT's contribution to the series of Asia-Pacific Science and Technology Conferences on Disaster Risk Reduction, their role as value-added provider for the Sentinel Asia and International Charter, their expertise in developing EO-based tools for disaster management for the region and

their willingness to partner with us in our capacity-building efforts.

Weblink:

<https://www.un-spider.org/news-and-events/news/asian-institute-technology-ait-signs-agreement-become-un-spider-regional>



## AIT AND UNESCO TO COMMEMORATE INTERNATIONAL DAY FOR THE CONSERVATION OF THE MANGROVE ECOSYSTEMS 2022



*Duration: 26 July 2022-25 August 2022*

### Description:

To commemorate International Day for the Conservation of the Mangrove Ecosystems 2022, AIT partnered with UNESCO to host a public exhibit on Mangroves of the World courtesy of the UNESCO Bangkok Office. The posters were displayed by the AIT Student Union in the AIT Conference Center for one month. Many photos were received and shared on AIT's official Facebook account, creating an impact on general audiences calling for the protection and restoration of the world's precious and vulnerable mangrove ecosystems.

Weblink:

<https://www.facebook.com/AITasia/posts/pfbid022tiaounEFEprthkbaTHtWPz2kEKf9HQzRsVaxZzRGqDkZWAFBcQaXy5vYHkJeMl>





## SIXTEENTH SESSION OF THE INTERGOVERNMENTAL MEETING OF THE MALÉ DECLARATION ON CONTROL AND PREVENTION OF AIR POLLUTION AND ITS LIKELY TRANSBOUNDARY EFFECT FOR SOUTH ASIA (MD/IG16), VIRTUAL MEETING



Duration: 12 January 2022

### Description:

The Sixteenth Session of the Intergovernmental Meeting of the Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effect for South Asia (MD/IG16) was organized virtually on 12 January 2022. About 40 participants representing National Focal Points (NFPs) and National Implementing Agencies (NIAs) of Malé Declaration member countries, namely Bangladesh, Bhutan, India, Iran, the Maldives, Nepal, and Sri Lanka as well as representatives from various international organizations, including the United Nations Environment Programme (UNEP), the United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP), the Climate and Clean Air Coalition (CCAC), the Stockholm Environment Institute (SEI), the International Centre for Integrated Mountain Development (ICIMOD), and the Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), participated in the meeting.

The major discussion was focused on the revival of the Malé Declaration and the review of the draft Strategy and Work Programme for Phase-VII (2022-2026) of the Malé Declaration. Some key decisions were made in the Session and agreed by member countries, which included,

1. Recognition on the importance of regional cooperation on air pollution in South Asia;



2. The decision to revive and relaunch the Malé Declaration at a high-level meeting in 2022;
3. Agreement in principle on the draft Strategy and Work Programme for Phase-VII (2022-2026) of the Malé Declaration;
4. Expansion of the scope of work of the Malé Declaration to include air pollution and climate change; and
5. Review of the structure of the Malé Declaration.

The AIT RRC.AP acting as the Secretariat of the Malé Declaration organized this virtual event.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no1-04.aspx>



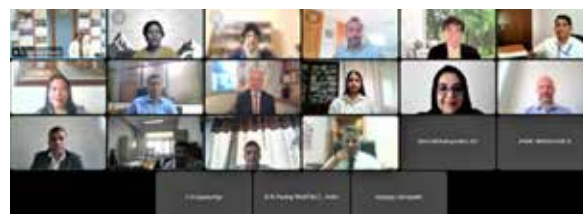
## THAILAND-CHINA COLLABORATION SEMINAR SERIES 2022



Duration: 27 June-30 September 2022

### Description:

The Working Group Meeting on drafting a Think Piece (Vision Paper) and Agreement for Strengthening the Malé Declaration on Control and Prevention of Air Pollution and its Likely Transboundary Effect for South Asia (MD WG2022) was organized on 23 June 2022 on an online platform. The objective of the MD WG2022 was to discuss and brainstorm the vision of the Malé Declaration and review the drafts of the Think Piece (Vision Paper) and of the Agreement for strengthening the Malé Declaration. More than 25 participants, including representatives of National Focal Points (NFPs) and National Implementing Agencies (NIAs) of Malé Declaration member countries, namely Bangladesh, Bhutan, India, Iran, the Maldives, Nepal, Pakistan, and



Sri Lanka as well as representatives of the Stockholm Environment Institute (SEI), the Climate Clean Air Coalition (CCAC), and the Regional Facilitator of the Malé Declaration participated in the meeting. The reviewed drafts of the Think Piece (Vision Paper) and of the Agreement will be further revised and will be approved at the Intergovernmental Meeting to be organized soon.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no2-01.aspx>



## WORKING GROUP MEETING OF EANET IN 2022 – VIRTUAL MEETING



*Duration: 24-25 August 2022*

### Description:

The Working Group Meeting of Acid Deposition Monitoring Network in East Asia (EANET) 2022 (WG2022) was convened virtually 24-25 August 2022. About 70 representatives from EANET participating countries, namely Cambodia, China, Indonesia, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, the Philippines, the Republic of Korea, Russia, Thailand, and Vietnam as well as the Secretariat and Network Center for the EANET gathered online to discuss and review the proposed projects submitted to the EANET Project Fund and other matters related to the expansion of the scope of EANET. At the session, eight project plans were presented and reviewed, which focused on the effects of atmospheric deposition on ecosystems, capacity building, and research fellowship programs, among others. The EANET project plans were discussed further during the



22nd Session of the Scientific Advisory Committee (SAC22) meeting in October 2022 and finally submitted for approval at the 24th Session of the Intergovernmental meeting of EANET (IG24) in November 2022. AIT's RRC.AP worked closely with the EANET Secretariat at UNEP in organizing the WG2022 virtual meeting.

Weblink:

[http://www.rrcap.ait.ac.th/news/Pages/vol23no3\\_03.aspx](http://www.rrcap.ait.ac.th/news/Pages/vol23no3_03.aspx)



## CAPACITY DEVELOPMENT PROGRAM ON AIR QUALITY MANAGEMENT AND EMISSION REDUCTION OF PM<sub>2.5</sub> FOR MEMBER COUNTRIES OF ASEAN HAZE AGREEMENT AND MALÉ DECLARATION, AIT, PATHUMTHANI, THAILAND



*Duration: 19-23 September 2022*

### Description:

The AIT Regional Resource Centre for Asia and the Pacific (AIT RRC.AP) along with partners organized a five-day capacity-building workshop on air quality management on 19-23 September 2022 at the AIT Conference Center. The workshop aimed to build the capacities of countries for better management of air quality and to enhance their technical capabilities to support national efforts for addressing air pollution issues.

More than 45 participants from 17 countries including nine member countries of the ASEAN Haze Agreement (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, and Thailand) and eight member countries of the Malé Declaration (Bangladesh, Bhutan, India, Iran, the Maldives, Nepal, Pakistan, and Sri Lanka) as well as a representative from the ASEAN Secretariat participated in the workshop.

The proceedings of the workshop consisted of five Modules Air Quality Monitoring, Emission Inventory Development, Air Quality Modeling, Impact Assessment, and Air Pollution Mitigation Policies. Hands-on training on air quality monitoring, air quality modeling, and emissions inventory were conducted. A half-day visit to the Automotive Emission



Laboratory of Pollution Control Department (PCD) and the Environmental Research and Training Center (ERTC) was organized, in which participants learned about emissions testing and the analysis of dioxin, mercury, and volatile organic compounds (VOCs).

This workshop was the second capacity-building workshop of the two-year project titled Capacity Development Program on Air Quality Management and Emissions Reduction of PM<sub>2.5</sub> for ASEAN Countries supported by the Asia-Pacific Network for Global Change Research (APN). APN funded this project as a part of its Capacity Development Program (CAPaBLE) and is in line with APN's thematic priority areas on transboundary air pollution and its impact on human health.

For more information can be found at

<http://www.rrcap.ait.ac.th/apn2022>

Weblink:

[http://www.rrcap.ait.ac.th/news/Pages/vol23no3\\_02.aspx](http://www.rrcap.ait.ac.th/news/Pages/vol23no3_02.aspx)



## TWENTY-SECOND SESSION OF THE SCIENTIFIC ADVISORY COMMITTEE MEETING (SAC22) ON THE ACID DEPOSITION MONITORING NETWORK IN EAST ASIA (EANET) – VIRTUAL MEETING



*Duration: 18-20 October 2022*

### Description:

The Twenty-second Session of the Scientific Advisory Committee (SAC22) of the Acid Deposition Monitoring Network in East Asia (EANET) was organized virtually on 18-20 October 2022. The meeting discussed the acid deposition monitoring activities of the EANET in 2021, including project proposals submitted by the Network Center and Participating Countries. Over 50 participants, including Scientific Advisory Committee members or their representatives from EANET Participating Countries, the Network Center, and the Secretariat joined the meeting. The meeting reviewed progress in the acid deposition monitoring activities of EANET in 2021, including the adoption of the data report for 2021, acknowledgment of the recommendations of the working group, report on the Inter-laboratory Comparison (ILC) Projects 2021, updates on the National Monitoring Plans of the Participating Countries,



revision of the Task Forces, and the work program and budget for 2023. At the meeting, SAC members were invited to share their comments and suggestions on each agenda item. AIT's RRC.AP actively participated and greatly supported the organization of the EANET SAC22 meeting. More information is available on the EANET website:

🌐 <https://www.eanet.asia/the-22nd-scientific-advisory-committee-meeting-on-the-eanet/>

Weblink:

🌐 <http://www.rrcap.ait.ac.th/news/Pages/vol23no4-07.aspx>



## TWENTY-FOURTH SESSION OF THE INTERGOVERNMENTAL MEETING (IG24) ON ACID DEPOSITION MONITORING NETWORK IN EAST ASIA (EANET), MANILA, PHILIPPINES



*Duration: 24-25 November 2022*

### Description:

The Twenty-fourth Session of the Intergovernmental Meeting (IG24) on the Acid Deposition Monitoring Network in East Asia (EANET) was organized in hybrid mode on 24-25 November 2022 in Manila, Philippines in order to make important decisions on the implementation of EANET's expansion of scope, a newly-established Project Fund, and other relevant matters. The meeting gathered over 70 representatives of EANET participating countries, namely Cambodia, China, Japan, Lao PDR, Malaysia, Mongolia, Myanmar, the Philippines, the Republic of Korea, Russia, Thailand, and Vietnam, the Secretariat, and the Network Center for EANET. Following the decision of the previous Intergovernmental Meeting (IG23) in November 2020, EANET countries have been working relentlessly on expanding the scope of EANET, including the newly-established Project Fund. The proceedings of IG24 included consideration of progress in EANET since IG23, outcomes of the Working Group Meeting, outcomes of SAC22, revision



of administrative and financial guidelines, reorganization of the Task Forces, and a work program, project plans, and a budget in 2023. The AIT RRC.AP actively participated and greatly supported the organization of the EANET IG24 Meeting. More information is available on the EANET website:

<https://www.eanet.asia/the-twenty-fourth-session-of-the-intergovernmental-meeting-on-the-acid-deposition-monitoring-network-in-east-asia>

Weblink:

🌐 <http://www.rrcap.ait.ac.th/news/Pages/vol23no4-06.aspx>



## AIT RRC.AP PARTICIPATED IN THE EXHIBITION OF SEVENTH SESSION OF THE COMMITTEE ON ENVIRONMENT AND DEVELOPMENT (7TH CED), BANGKOK, THAILAND



*Duration: 29 November-1 December 2022*

### Description:

The Asian Institute of Technology (AIT) promoted AIT-UNEP collaboration projects in the region at the Seventh Session of the Committee on Environment and Development (CED7) at the UN Conference Centre from November 29 to December 1, 2022. The AIT team, represented by staff from AIT RRC.AP and the Office of the Vice President for Knowledge Transfer, mounted an exhibition booth to disseminate AIT-UNEP collaborations projects, including:

- Promoting the Minamata Convention on Mercury by making the most of Japan's knowledge and experiences
- The Acid Deposition Monitoring Network
- Strengthening ASEAN Member State Policies with Environmental Health Data on Costs of Inaction and Co-Benefits
- Regional Dialogue Series by SEA circular
- Implementing Global Opportunities for SDGs (GO4SDGS) and Facilitating the Uptake of Science-based Tools for SCP Policy Design and Implementation in the Asia-Pacific Region



- Promotion of Community Resilience Against Plastic Pollution and Climate Change in the Mekong River Basin

The Committee on Environment and Development (CED) is an intergovernmental body of the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP). It is convened every two years to review regional trends, identify priorities for action, promote dialogue, consider common regional positions and promote a collaborative approach to addressing development challenges in the region between governments and civil society, the private sector, the UN System and other international organizations. The CED provides recommendations to the Commission as a body made up of 53 members and nine associate members.

Weblink:

<http://www.rrcap.ait.ac.th/news/Pages/vol23no4-05.aspx>

# SUSTAINABLE DEVELOPMENT GOALS DASHBOARD

SCHOOL	DEPARTMENT	PROGRAM	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Website
School of Environment, Resources, and Development	Department of Development and Sustainability	Development and Sustainability																		<a href="#">Development and Sustainability</a>
		Development Planning Management and Innovation																		<a href="#">Development Planning Management and Innovation</a>
		Gender and Development Studies																		<a href="#">Gender and Development Studies</a>
	Department of Energy, Environment, and Climate Change	Natural Resources Management																		<a href="#">Natural Resources Management</a>
		Society and Environmental Governance																		<a href="#">Regional and Rural Development Planning</a>
		Urban Innovation & Sustainability																		<a href="#">Urban Environmental Management</a>
		Climate Change and Sustainable Development																		<a href="#">Climate Change and Sustainable Development</a>
	Department of Food, Agriculture, and BioResources	Environmental Engineering and Management																		<a href="#">Environmental Engineering and Management</a>
		Marine Plastic Abatement																		<a href="#">Marine Plastic Abatement</a>
		Regenerative Sanitation																		<a href="#">Regenerative Sanitation</a>
School of Engineering and Technology	Department of Civil and Infrastructure Engineering	Sustainable Energy Transition																		<a href="#">Sustainable Energy Transition</a>
		AgriBusiness Management																		<a href="#">AgriBusiness Management</a>
		Agricultural Systems & Engineering																		<a href="#">Agricultural Systems and Engineering</a>
	Department of Information and Communication Technologies	Aquaculture and Aquatic Resources Management																		<a href="#">Aquaculture and Aquatic Resources Management</a>
		Food Engineering and Bioprocess Technology																		<a href="#">Food Engineering and Bioprocess Technology</a>
		Food Innovation, Nutrition and Health																		<a href="#">Food Innovation Nutrition and Health</a>
		Construction, Engineering and Infrastructure Management																		<a href="#">Construction Engineering and Infrastructure Management</a>
	Department of Industrial Systems Engineering	Geotechnical and Earth Resources Engineering																		<a href="#">Geotechnical and Earth Resources Engineering</a>
		Structural Engineering																		<a href="#">Structural Engineering</a>
		Transportation Engineering																		<a href="#">Transportation Engineering</a>
School of Management SET & SERD	Department of Civil and Infrastructure Engineering	Water Engineering and Management																		<a href="#">Water Engineering and Management</a>
		Computer Science																		<a href="#">Computer Science</a>
		Data Science and AI																		<a href="#">Data Science and AI</a>
	Department of Information and Communication Technologies	Information & Communications Technologies																		<a href="#">Information and Communications Technologies</a>
		Information Management																		<a href="#">Information Management</a>
		IoT (Internet of Things) Systems Engineering																		<a href="#">Internet of Things (IoT) Systems Engineering</a>
		Remote Sensing and Geographic Information Systems																		<a href="#">Remote Sensing and Geographic Information Systems</a>
	Department of Industrial Systems Engineering	Telecommunications																		<a href="#">Telecommunications</a>
		Bio-Nano Material Science and Engineering																		<a href="#">Bio-Nano Material Science and Engineering</a>
		Industrial and Manufacturing Engineering																		<a href="#">Industrial and Manufacturing Engineering</a>
School of Management SET & SERD	Department of Industrial Systems Engineering	Mechatronics																		<a href="#">Mechatronics</a>
		Microelectronics and Embedded Systems																		<a href="#">Microelectronics and Embedded Systems</a>
		Management																		<a href="#">Management</a>
	School of Management SET & SERD	Disaster Preparedness, Mitigation, and Management																		<a href="#">Disaster Preparedness Mitigation and Management</a>
		Urban Water Engineering and Management																		<a href="#">Urban Water Engineering and Management</a>



## SUSTAINABLE DEVELOPMENT GOALS DASHBOARD

AIT's Five Thematic Research Areas	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17																	Website
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
Climate Change																		
Food, Energy, Water Security																		
Infrastructure																		
Smart Communities																		
Technology, Policy and Society																		
<b>Institute Outreach Centers</b>																		
AIT AI Technology (AIT2) Center																		<a href="#">AIT AI Technology (AIT2) Center</a>
AIT Center in Vietnam (AITVN)																		<a href="#">AIT Center in Vietnam (AITVN)</a>
AIT Extension																		<a href="#">AIT Extension</a>
AIT Solutions																		<a href="#">AIT Solutions</a>
Belt and Road Research Center																		<a href="#">Belt &amp; Road Research Center</a>
Center for Global Challenges																		
Entrepreneurship Center																		<a href="#">AIT Entrepreneurship Center</a>
Geoinformatics Center (GIC)																		<a href="#">Geoinformatics Center</a>
Global Water and Sanitation Center (GWSC)																		
Internet Education & Research Laboratory (intERLab)																		<a href="#">Internet Education and Research Laboratory (intERLab)</a>
Regional Resource Center for Asia & the Pacific (RRC.AP)																		<a href="#">Resource Center for Asia &amp; the Pacific (RRC.AP)</a>
Yunus Center AIT																		<a href="#">Yunus Center AIT</a>
<b>Institute Service Centers</b>																		
Facilities																		<a href="#">Office of Facilities &amp; Assets Management</a>
Human Resources																		<a href="#">Human Resources Office</a>
Student Affairs																		<a href="#">Admissions / Career Center</a>



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