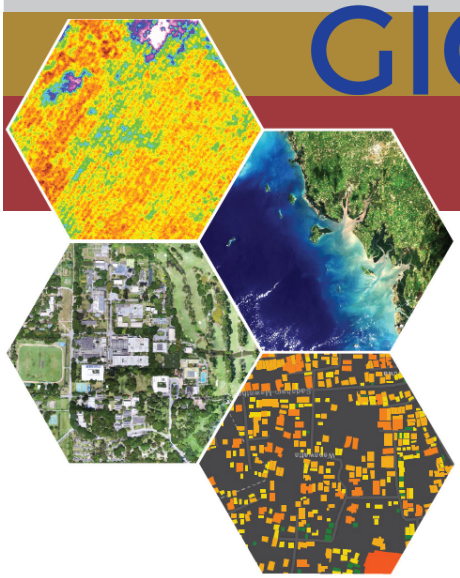
Thailand-Japan Environmental Solutions Week
January 14 - 16, 2020 | Bangkok, Thailand

GEOINFORMATICS CENTER

April 2020 NEWSLETTER



In This Issue

Thailand-Japan Environmental Solutions Week

In January 2020 Japan's Ministry of the Environment and Thailand's Ministry of Natural Resources and Environment joined to kick-off the Thailand-Japan Environmental Solutions Week. The event brought together professionals from the private sector to showcase innovative environmental research working towards achieving the Sustainable Development Goals. The event took place from January 14-16, 2020 at the Barkeley Hotel Pratunam in Bangkok.

The Geoinformatics Center's Associate Director, Dr. Kavinda Gunasekara, participated in a parallel session titled Marine Plastic Debris and Land-based Waste Management. The session was presided over by H.E. Ms. Yukari Sato, Japan's State Minister of the Environment. Dr. Gunasekara delivered a presentation on GIC's current progress towards regionally modeling plastic leakage in the Mekong River Basin. This work is taking place under the UN Environment Program's (UNEP) Countermeasure project.

Thus far GIC has identified five sites for data collection along major tributaries of the Mekong River in Thailand, Lao, Cambodia, and Vietnam. Community cleanup and data collection events have already taken place at the two Thailand sites located in Chiang Rai and Ubon Rachathani. UAV were utilized to record high-resolution imagery of the plastic accumulated at the sites. GIC's collaboration with Pirika Inc (Japan) will lead to the development of machine learning algorithms which identify plastic waste from UAV imagery.

APCAS 28 and Expert Group Meeting

28th Meeting of the Asia and Pacific Commission on Agricultural Statistics (APCAS 28)

A representative from GIC served as an observer at FAO's biannual Asia and Pacific Commission on Agricultural Statistics (APCAS). This year marks the Commission's 28th meeting, which took place in Bali, Indonesia from February 10-14, 2020.

APCAS functions as a forum for senior statisticians from FAO and member countries in the Asia-Pacific region to share experiences in agricultural statistics from the interim two-year period. Sessions during APCAS 28 focused on sustainable development goal (SDG) governance, farm-based SDG indicators, food security, ICT in agriculture statistics, microdata dissemination, and use of SDG's in relation to fishery and agriculture statistics.

Member countries which participated in APCAS 28 included Indonesia, Vietnam, Bhutan, Thailand, Cambodia, Nepal, Timor Leste, India, Fiji, Samoa. Sri Lanka, Philippines, Mongolia, Malaysia, South Korea, Tonga, Myanmar, and Lao PDR.

FAO marked the occasion with the release of its new user manuals which detail procedures for implementing computer assisted personal interview (CAPI). CAPI offers a number of advantages over the established paper-based system for census interviews, including enumeration error reduction, enumerator progress tracking, and improved data entry efficiency. A number of countries in the Asia-Pacific region have already piloted CAPI projects for system assessment and reported their findings at an expert group meeting in New Delhi in 2019. Overall reactions were positive with the intent to integrate CAPI into upcoming census activities.

Electronic versions of FAO's CAPI user manuals can be accessed through the following link: http://geoinfo.ait.ac.th/gic-attends-apcas28-and-expert-group-meeting-in-bali/

APCAS 28 featured two side events which explored concepts related to agricultural statistics. The first side event focused on SDG Indicator 5.A.1, which addresses Women's and Men's secure Access to Agriculture Land. FAO and UN Women led a discussion with member country representatives which explored the concept of land ownership and common difficulties in bequeathing agricultural land.

AIT, FAO, and the Asian Development Bank jointly organized the second side event which highlighted the application of Earth Observation Data for agriculture statistics. Over the course of three days (Feb. 17 – 19), representatives from the public and private sector shared their expert knowledge on a range of related topics including ICT for mobile data collection, GNSS data collection for census activities, GIS for agricultural statistics, sampling frames, sources of satellite imagery, remote sensing for crop area estimation, and cost effective technologies for estimating disaster impacts.

Agriculture and statistics officers from 10 countries participated in the EO side event. Countries represented included Afghanistan, Bhutan, Lao PDR, India, Indonesia, Nepal, Papua New Guinea, Philippines, Thailand, and Timor Leste. Representatives from the private sector including Airbus, ESRI, Piesat, and Maxar (Digital Globe) were also in attendance demonstrating their latest geospatial solutions for agriculture-related work.

3rd Annual GNSS Training at AIT

The Geoinformatics Center hosted the 3rd Annual Training on GNSS from January 6-10, 2020 at the AIT Conference Center.

The 5-day training course was jointly organized in collaboration with the University of Tokyo's Center for Spatial Information Science (CSIS/UT), and the International Committee on Global Navigation Satellite Systems (ICG). Organizers delivered the course with the intention of promoting awareness for GNSS and its applications in the Asia-Pacific region.

GNSS, or Global Navigation Satellite Systems, refers to constellations of satellites which provide signals that aid in positioning, navigation, and timing on a global scale. There are four global systems in place including GPS (USA), GLONASS (Russia), Beidou (China), and Galileo (European Union). There are also two regional systems that can contribute to GNSS solutions within their coverage area, including QZSS (Japan) and IRNSS (India). There are a number of GNSS applications that are commonly used including land and aerial surveying, pedestrian navigation, photography geocoding, precision agriculture, and autonomous driving.

In total 70 professionals and graduate students hailing from the government sector, private sector, NGO's, and academia took part in the 2020 GNSS training course. 17 countries were represented, including Algeria, Bangladesh, Cambodia, India, Indonesia, Malaysia, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Peru, Philippines, Singapore, Sri Lanka, Thailand, and Vietnam. ICG played a major role in helping participants attend the training course by providing 19 travel scholarships.

GNSS Training Course Participants at AIT

Topics covered during the training course included an Overview of GNSS constellations, RTKLib for GNSS Data Processing, Field Survey Using Low-Cost receivers, Real-Time GNSS data processing, and GNSS Raw Data Processing with Android Devices. Each of the topics featured theoretical lectures and practical sessions presented by trainers from the University Tokyo, including Dr. Dinesh Manandhar, Mr. Kobayashi Kaito and Mr. Yize Zhang.

The GNSS training course was made possible through sponsorship by ICG and Septentrio. ICG was founded in 2005 and operates under the United Nations Office for Outer Space Affairs. ICG focuses on coordination between GNSS data providers and promotes the utilization of GNSS data. Septentrio is a European private industry leader in GNSS established in 2000. The Belgium-based company produces GNSS receivers and antennae, software for GNSS data collection/processing/analysis, and offers a precise point positioning (PPP) service.

If you are or someone you know might be interested in a future GNSS training course ait AIT please stay tuned to the GIC website's Training Programs page (http://geoinfo.ait.ac.th/training/training-programs/) or follow us on Facebook for updates.

Hands-on GNSS data collection session

Group data analysis for field collected data

Regional Rice Center Meeting in Chanthaburi

The Geoinformatics Center represented AIT with its rice research efforts using unmanned aerial vehicles at the 2020 Thailand Regional Rice Center Meeting for Central, Western, and Eastern Regions.

The three-day meeting, which lasted from March 10 – 12, 2020, took place at the Sand Dunes Chao Lao Beach Resort in Chanthaburi, Thailand. The Chachoengsao Rice Research Center hosted the annual event for 2020.

Following a soft opening on Tuesday March 10, 2020, Miss Nonticha Wansawang, Director of the Thailand Rice Department, led the official opening ceremony on Wednesday March 11, 2020. Miss Wansawang delivered an inspiring presentation on methods of improving rice processing for improved product value.

The meeting featured 17 oral presentations delivered by rice research center research staff and outside guests. In addition to AIT, the Siam Crystal Rice Company was also invited to contribute its research to the meeting. A poster session featured research by 21 Thai regional rice center researchers from around the central, western, and eastern regions.

For the latest news and happenings involving Thailand's rice research projects please visit the Ministry of Agriculture and Cooperatives Rice Department website at: http://www.ricethailand.go.th/web/

Opening ceremony of the 2020 Thailand Regional Rice Research Center Meeting for Central, Western, and Eastern Regions

Don't forget to stay inside today

Training of Trainers for Agroecological Zonation

Trainers and participants for the AEZ training of trainers

Six experts from Lao PDR's Department of Agricultural Land Management (DALAM) attended a three-day training of trainers in Agroecological Zonation (AEZ) from Febraury 5 – 7, 2020 at the Geoinformatics Center. Additional participants from Sri Lanka, Bangladesh, and Cambodia also participated in the training program.

Trainers from GIC were joined by Dr. Freddy Nachtergaele, a world-renowned expert on AEZ. Dr. Nachtergaele previously worked with FAO to create AEZ modeling software dating back to the 1980's. In the last few months GIC has been collaborating with Dr. Nachtergaele to integrate his AEZ modeling software into Python scripting language for ease of use with modern systems.

The objective of the training course is to imbue participants with the skills necessary to create agriculture maps with the AEZ modeling software using national data from their home countries. The software is capable of producing maps depicting spatial distribution of crops, crop suitability maps, as well as potential crop growth forecasts.

The training program is part of an ongoing FAO project called Strengthening Agro-climatic Monitoring and Information Systems (SAMIS). SAMIS is being implemented in Lao PDR to prepare the country for shifts in agriculture due to climate change. The previous project phase focused on applications of remote sensing and GIS for agriculture. The current phase uses AEZ modeling to produce maps necessary to assist the Ministry of Agriculture in future agricultural planning. The first task for the DALAM experts in the current phase will be to use AEZ modeling software to map production of six major crops at the national level.

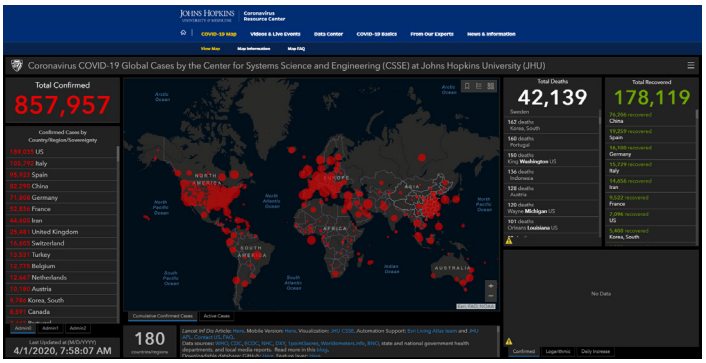
GIC Working from Home during the COVID-19 Pandemic

The first quarter of 2020 will be remembered for the global onset of the COVID-19 pandemic. COVID-19 is a highly contagious virus that causes severe acute respiratory infection and can lead to death. As such, countries worldwide are restricting travel, services, and recommending self-quarantine to limit further spread of the virus.

AIT's COVID-19 Task Force closely monitored the global situation as well as developments from within Thailand since the onset of the virus outbreak. On Wednesday March 18, 2020, AIT announced a temporary campus-wide work-from-home order and a transition towards online learning until March 31. A majority of AIT students returned to their home countries, with approximately 600 remaining on campus. As of March 30, 2020, AIT extended the work-from-home order through April 30 due to the increasingly severe global pandemic. GIC has thus been following AIT's work-from-home order, convening business as usual by conducting online meetings.

As of April 12, 2020 there are 1,792,899 cases of COVID-19 confirmed worldwide, with more than 110,000 deaths attributed to the virus. The United States leads as the country with the highest number of confirmed cases at 530,006. Comparatively, Thailand ranks 49th worldwide with 2,551 confirmed cases. It should be noted that the number of cases is dynamic, with an increasing number of infected and deaths every day.

Johns Hopkins University (Baltimore, Maryland, USA) has an excellent web portal which displays up-to-date figures on COVID-19 confirmed cases, recoveries, and deaths. Data can be accessed through an interactive map with information available from Admin 0 through Admin 2 levels. The COVID-19 web portal can be found using the following link: https://coronavirus.jhu.edu/map.html



Johns Hopkins University Interactive COVID-19 Data Portal

A majority of the cases in Thailand have been attributed to public social gatherings and international travelers who embarked from East Asian countries with large amounts of infected individuals. In response, the Thai government announced nationwide shopping mall closures on Sunday March 22, 2020. Other venues receiving closure orders included cinemas, spas, amusement parks, restaurants (except takeout), educational institutions, sporting venues, beauty salons, and cock fighting events. Travel to Thailand has also been restricted for at-risk countries to restrict virus spread in Thailand. This policy resulted in rescinding visa exemptions for Italy, South Korea, and Hong Kong, as well as temporarily removing visa-on-arrival privileges for 18 countries, including China.

WHO has a number of recommendations to reduce spread of the COVID-19 virus. As you may already know, these recommendations include: frequent handwashing, maintaining a social distance of at least 1 meter, avoiding having hands make contact with facial mucus membranes, and practicing respiratory hygiene. Finally, be proactive about seeking medical assistance if you experience fever, coughing, or difficulty breathing.

The GIC team extends its best wishes to all the friends of the Center across the globe. We sincerely hope that you and your loved ones remain safe and healthy throughout this pandemic.