PROVISIONAL PROSPECTUS

**Regional Practical Training Course on
Google Earth Engine and Oceanographic Data Visualization**

4–8 September 2023
SEAFDEC Training Department, Samut Prakan, Thailand

Background

Over the past several decades, geo-information technologies such as geographic information system (GIS) and remote sensing (RS) were utilized as tools for many aspects of fisheries and environmental sciences which can help fisheries development and management. These technologies can serve as good media to effectively disseminate information and coordinate and improve core activities carried out by fisheries organizations. In Southeast Asia, a regional fisheries information system is considered to be useful for fisheries planning and management, supporting the sustainable use of fishery resources in the region.

To support the SEAFDEC Member Countries in the utilization of fisheries GIS (FGIS) and RS for the sustainable use of the fishery resources in the region, the SEAFDEC Training Department (TD) implemented the project entitled "Sustainable Utilization of Fisheries Resources and Resources Enhancement in Southeast Asia" during 2020–2024 supported by the Japanese Trust Fund. In 2020, TD organized the "Regional Consultation Workshop on the Utilization of FGIS and RS to Improve Fisheries Management in Southeast Asia" which served as a platform for the National Focal Persons from the participating SEAFDEC Member Countries to discuss the training activities in 2021–2023 based on the urgent needs of the participating countries. The Consultation agreed that GIS for aquaculture was the priority theme, while the other important themes include GIS for marine resources management, oceanographic data analysis and visualization, RS for marine resources management, and web mapping service technology.

In 2021, the "Online Regional Training Course on Geographic Information System and Remote Sensing for Aquaculture" was organized on 30 November–3 December to support the needs of participating countries. The result of the training evaluation showed that most of the participants would appreciate it if SEAFDEC could organize the physical practical training so they could learn by doing together with the resource persons. To respond to the suggestion of the SEAFDEC Member Countries, SEAFDEC/TD organized the "Regional Practical Training Course on Geographic Information System and Remote Sensing for Aquaculture" on 3–6 December 2022. During the Training, participants gained knowledge and experience through their practice with GIS and RS data analysis to find the potential sites for green mussel aquaculture.

In 2023, SEAFDEC/TD would respond to the suggestion of the SEAFDEC Member Countries from the Consultation Workshop in 2020 and 45th Meeting of the SEAFDEC Program Committee in 2022 by organizing the "Regional Practical Training Course on Google Earth Engine and Oceanographic Data Visualization" from 4 to 8 September 2023. Google Earth Engine (GEE) is a computing platform that allows users to run geospatial analysis on Google's infrastructure. GEE combines a multi-petabyte catalog of satellite imagery and geospatial datasets with planetary-scale analysis capabilities. The public

data archive includes more than forty years of historical imagery and scientific datasets which are updated and expanded daily. This platform is very useful for the researchers from the SEAFDEC Member Countries to learn how to explore and utilize those available datasets.

Objectives

1. Enhance the capacity of human resources (*i.e.,* junior fisheries officers and researchers) from the SEAFDEC Member Countries on the utilization of GIS and RS data via Google Earth Engine for oceanographic data visualization
2. Strengthen the network of FGIS and RS researchers in the region

Expected outputs

1. Enhanced capacity of junior fisheries officers and researchers from the SEAFDEC Member Countries on the utilization of GIS and RS data via Google Earth Engine for oceanographic data visualization
2. Strengthened network of FGIS and RS researchers in the region

Date and venue

The Training Course is tentatively scheduled from 4 to 8 September 2023 at SEAFDEC/TD, Samut Prakan, Thailand. Accommodation and meals (breakfast and lunch) for participants and resource person will be arranged at the SEAFDEC/TD Dormitory.

Target participants

One (1) or two (2) junior fisheries officer(s) or researcher(s) nominated by the respective participating SEAFDEC Member Countries. The participants should have basic knowledge of and/or working on GIS and RS in fisheries and environment.

SEAFDEC strives towards equal opportunities for the participation of female and male representatives from the SEAFDEC Member Countries in all events organized by SEAFDEC.

Resource person and supporters

Resource person	Position/Institution
1) Dr. Wirote Laongmanee	Lecturer, Faculty of Marine Technology, Burapha University, Chanthaburi Campus
Assistant resource person	**SEAFDEC/TD**
1) Ms. Siriporn Pangsorn	Fishing Ground Information Scientist, Research and Development Division (RDD)
Technical and administrative support	**SEAFDEC/TD**
1) Mr. Sukchai Arnupapboon	Head of RDD and Fishing Ground and Oceanography Section Head
2) Ms. Woraluk Meesomwat	Fisheries Database Developer, RDD
3) Ms. Nathacha Changphetphol	Fishery Oceanographer, RDD
4) Ms. Nathacha Sornvaree	Administrative Officer, RDD

Preparation

Prior to the Training Course, the participants are requested to:

- Sign up for the Google Earth Engine platform at https://code.earthengine.google.com/register. Please note that the approval may take time several days.
- Download and install the Quantum GIS (QGIS) software from https://qgis.org/en/site/forusers/download.html

Subsequently, the participants are encouraged to practice and explore the software and platform.

Language

English language would be used throughout the Training Course; therefore, English proficiency is required for the participants.

Evaluation

The understanding of the participants would be evaluated through the output of practical works on the last day of the Training Course. In the end, the participants would be requested to fill in the evaluation form to assess the conduct of the Training Course.

Certificate of Completion

Certificates would be awarded to the participants upon completion of the Training Course and successfully passing the practical works.

Agenda and Syllabus

The Provisional Agenda and Syllabus of the Training Course are shown in the table below and Thailand local time (UTC+07:00) would be followed.

Date and time	Activity	Person in-charge
Day 1: 4 September 2023, Monday		
08:30–09:00	Registration	SEAFDEC/TD
09:00–09:15	Opening Ceremony	Chief of Training Department/Representative
09:15–09:45	Group photo and refreshment break	
09:45–10:00	Introduction to the Training Course	*Ms. Siriporn Pangsorn*
10:00–12:00	Introduction to Google Earth Engine	*Dr. Wirote Laongmanee*
12:00–13:30	Lunch break	
13:30–15:00	Introduction to Google Earth Engine (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
15:00–15:20	Refreshment break	
15:20–16:30	Introduction to Google Earth Engine (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
18:00–20:00	Reception dinner	SEAFDEC/TD
Day 2: 5 September 2023, Tuesday		
09:00–10:00	Google Earth Engine for vegetation study	*Dr. Wirote Laongmanee*
10:00–10:20	Refreshment break	

Date and time	Activity	Person in-charge
10:20–12:00	Google Earth Engine for vegetation study (Cont.)	*Dr. Wirote Laongmanee*
12:00–13:30	Lunch break	
13:30–15:00	Google Earth Engine on simple classification	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
15:00–15:30	Refreshment break	
15:30–16:30	Google Earth Engine on simple classification (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
Day 3: 6 September 2023, Wednesday		
09:00–10:00	Google Earth Engine on supervise classification	*Dr. Wirote Laongmanee*
10:00–10:20	Refreshment break	
10:20–12:00	Google Earth Engine on supervise classification (Cont.)	*Dr. Wirote Laongmanee*
12:00–13:30	Lunch break	
13:30–15:00	Google Earth Engine on supervise classification (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
15:00–15:30	Refreshment break	
15:30–16:30	Google Earth Engine on supervise classification (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
Day 4: 7 September 2023, Thursday		
09:00–10:00	Google Earth Engine on accuracy analysis	*Dr. Wirote Laongmanee*
10:00–10:20	Refreshment break	
10:20–12:00	Google Earth Engine on accuracy analysis (Cont.)	*Dr. Wirote Laongmanee*
12:00–13:30	Lunch break	
13:30–15:00	Google Earth Engine on export data	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
15:00–15:30	Refreshment break	
15:30–16:30	Google Earth Engine on export data (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
Day 5: 8 September 2023, Friday		
09:00–10:00	Oceanographic data visualization	*Dr. Wirote Laongmanee*
10:00–10:20	Refreshment break	
10:20–12:00	Oceanographic data visualization (Cont.)	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
12:00–13:30	Lunch break	
13:30–14:30	Oceanographic data visualization (Cont.) and Practical work results presentation preparation	*Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
14:30–15:45	Presentation on the results of the practical work and Training Course Evaluation	*Trainees, Dr. Wirote Laongmanee and Ms. Siriporn Pangsorn*
15:45–16:00	Refreshment break	
16:00–16:30	Closing Ceremony	Chief of Training Department/Representative