The Regional Training Course on
Data-Limited Fish Stock Assessments Using R-Statistical Program

6-10 August 2023

Prepared by
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Introduction

In the current situations, the fish stock assessment is required to be applied in every region with the active marine capture fishery. The results from stock assessment can provide the situation of stock for further appropriate management measures to be synthesized according to the Sustainable Development Goal 14, life below water. According to the current regional fishery management of the Southeast Asia, the region contributes high amount of the marine capture fishery amount to the world with the small amount of assessed stock status compared to the catch amount (Hilborn et al., 2020; RAM Legacy, 2021). The key to the stock status assessment is not the sophisticated models or the multi-dimensional models for the complicated ecological aspect in the Southeast Asia but it is data available and stock assessment process. SEAFDEC and the member countries are aware of this issue and work closely together through number of regional/national long term data stock assessment training courses and workshops including the corporation with the outside organizations such as FAO. However, stock assessment in Southeast Asian region still be a few because of the existing of fisheries data is limited.

To achieve increasing assessed stock status within the region based on few available data, the onsite training workshop on data-limited fish stock assessment was requested by the consultation meeting with focal point of SEAFDEC MCs in 2020 with data limited stock assessment methods are expected to be promoted throughout the region by SEAFDEC/TD. To follow up the request, the Japanese Trust Fund has enhancing scientific knowledge to support the countries in fisheries management within the Southeast Asian Region under the project "Sustainable Utilization of Fisheries Resources and Resources Enhancement in Southeast Asia" SEAFDEC/TD. The project came up with the plan to conduct a training course to enhance the capacity of human resources on the improve knowledge and skill on data-limited fish stock assessment based on the current available and up-to-date software such as R-statistical program. This training course would be an onsite practical class at SEAFDEC/TD. The participants from SEAFDEC Member Countries are all encouraged to participate to complete their knowledge and skills on the fish population dynamics and stock assessment based on R programming.

Objectives

- To improve the capacity of human resources from the SEAFDEC Member Countries on data-limited fish stock assessment using R-statistical program
- To share and update the methods on utilization of fishery data collected from the field
- To strengthen the network of human resources on fish stock assessment in the Southeast Asian region

Expected Outcomes

- Improved and update the knowledge of human resources from the SEAFDEC Member Countries on data-limited stock assessment methods
- Enhanced and updated information on the fish population dynamics and stock status of fisheries resources in the region
- Strengthened network of human resources on fish stock assessment in the Southeast Asian region

Evaluation

The pre and post examination will be applied to the participants at the first and last day of the training course to monitor the progress of the improvement in skills and knowledge of participants. At the end of each session of the Training Course, the participants would be requested to fill in the evaluation form to assess the conduct of the Training Course.

Venue and Accommodation

The training course would be organized for 5 days during 6 to 10 August 2023 at SEAFDEC/TD, Samut Prakan, Thailand and the participants would be accommodated at the dormitory of SEAFDEC/TD.

Target Participants

The fisheries officers and/or researchers from each of SEAFDEC Member Countries who attend the Regional Training Course on Data Collection and Bio-Statistic for Fishery during 3-5 August 2023 at SEAFDEC/TD are invited to continuously participate to program.

Timetable Training

Date/ and time	Activity/topic	Resource person	Remarks
6 August 2023			
08:30–09:00	- Registration - Opening ceremony - Group photo	TD staff	

Date/ and time	Activity/topic	Resource person	Remarks
09:00-10:00	- The length-based stock assessment: case study from Indonesia	Mr. Wiwiet Teguh Taufani	Invited presenter from Hokkaido University.
10:00–12:00	- Growth parameter estimation o Powell&Wetherall's method o ELEFAN: *K*-Scan o ELEFAN: RSA o ELEFAN:SA o ELEFAN:GA	Dr. Supapong Pattarapongpan	Using R statistical analyses and introduction of R packages to fisheries (TropFishR)
12:00–13:30	Lunch break		
13:30–16:30	- Growth parameter (cont.) - Homework assignment	Dr. Supapong Pattarapongpan	Practice on R packages
7 August 2023			
09:00-12:00	- Mortality parameters o Total mortality (*Z*) o Natural mortality (*M*) o Fishing mortality (*F*)	Dr. Supapong Pattarapongpan	Practice on R packages
12:00-13:30	Lunch break		
13:30-16:30	- Gear selectivity o Trawl selectivity o Gillnet selectivity - Homework assignment	Dr. Supapong Pattarapongpan	Practice on R packages
8 August 2023			
09:00–12:00	Length-based stock assessment - Pope's VPA - Thompson and Bell's YPR - Beverton and Holt's YPR	Dr. Supapong Pattarapongpan	Practice on R packages
12:00–13:30	Lunch		
13:30–16:30	- Length-based stock assessment (cont.) - Homework assignment	Dr. Supapong Pattarapongpan	Practice on R packages
9 August 2023			
09:00–12:00	- Length-Based Spawning Potential Ratio (LBSPR)	Dr. Supapong Pattarapongpan	Practice on R packages
12:00–13:30	Lunch break		

Date/ and time	Activity/topic	Resource person	Remarks
13:30–16:30	- Length-Based Spawning Potential Ratio (LBSPR) (cont.) - Homework assignment	Dr. Supapong Pattarapongpan	Practice on R packages
10 August 2023			
09:00–12:00	Group presentation and summary on the results	Dr. Supapong Pattarapongpan	Practice on R packages
12:00-13:30	Lunch break		
13:30-16:00	- Group presentation and summary on the results (cont.) - Evaluation and closing	Dr. Supapong Pattarapongpan	Practice on R packages

Instructors: Dr. Supapong Pattarapongpan and Mr. Wiwiet Teguh Taufani

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References

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