Training Course on

the Principles and Methods of Quantitative Echosounder EK80 to Conduct Fisheries Acoustic Survey

Prepared by
Research and Development Division
Training Department
Southeast Asian Fisheries Development Center

Introduction

Quantitative echosounder is a rapidly growing field in the study and management of fishery resources. Quantitative echosounder provides a non-invasive and cost-effective means of gathering information about the distribution, abundance, and biomass of fish populations, which is essential for the sustainable management of these resources. The use of quantitative echosounder has greatly expanded in recent years due to advances in technology, and they are now widely used in research applications.

The EK80 system is one of the most widely used systems in the fishery resources survey due to its high precision and reliability. The EK80 can provide accurate and detailed information about the distribution and size of fish populations, EK80 is an important tool in the management of fishery resources, and this system needs trained researchers who can use the system effectively.

The utilization of the Quantitative Echosounder EK80 in conducting effective and precise fisheries acoustic surveys necessitates the development of researcher capacity. Adequate training and familiarization with the EK80 will lead to the optimization of its performance and the accuracy of the survey data collected. This, in turn, will lead to improved decision-making and management of the fishery. In conclusion, capacity building for researchers in the use of the Quantitative Echosounder EK80 is essential for ensuring the validity and usefulness of acoustic survey results.

Objectives

- Capacity building of researchers in using research equipment, Quantitative Echosounder EK80
- Calibrating the Quantitative Echosounder EK80 of M.V.SEAFDEC2

Expected Outputs

- Participants will comprehensively understand the principles and methods of quantitative Echosounder using the EK80 system.
- Participants have hands-on experience in using the EK80 system for surveying and monitoring fish populations.
- Participants have a deeper understanding of the theory and principles of Quantitative Echosounder.
- Report of the Training Course on the Principles and Methods of Quantitative Echosounder EK80

Date, Venue, and Accommodation

The training course would be organized on 21 – 24 March 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 researchers of SEAFDEC/TD

Consultant

Dr. Yuttana Theparoonrat, Former Technical Expert of SEAFDEC and Expert of Quantitative Echosounder.

Instructors

1. Mr. Zulkarnaen Fahmi, Research Institute for Freshwater Aquaculture and Fisheries Extension, Indonesia.
2. Mr. Freddy Supriyadi, Inland Fishery Resources Development and Management Department, Indonesia.

Timetable

Mar. 21, 2023 (Tue)	0830-0900	Registration	Lecture room
	0900-0930	Opening and Group photo	Lecture room
	0930-1000	Coffee break	
	1000-1200	• Introduction to hydroacoustic as a fisheries sampling method: o Hydroacoustic theory and terminology o Current utilization of hydroacoustic • Discussion	Lecture room Mr. Fahmi
	1200-1300	Lunch	
	1300-1500	• Introduction echo sounder EK-80: o The hardware o The software (sampling & processing) o Interpretation	Lecture room Mr. Fahmi
	1500-1515	Coffee break	
	1515-1715	o Operation of the EK-80 echo sounder: o Basic echogram	Lecture room Mr. Fahmi
	1730-1900	Welcome dinner	Restaurant
Mar. 22, 2023 (Wed)	0845-1015	• Calibration theory and methods • Vessel noise measurement theory and methods	Lecture room Mr.Fahmi

	1015-1030	Coffee break	Lecture room
	1030-1200	• Survey theory and methodology	Lecture room Mr. Freddy, Mr. Fahmi
	1200-1300	Lunch	
	1300-1500	• Hydroacoustic assessment and monitoring • The theory of target strength (TS) and its estimation	Lecture room Mr. Freddy, Mr. Fahmi
	1500-1515	Coffee break	
	1515-1715	• Visit M.V.SEAFDEC 2 (Equipment check)	M.V.SEAFDEC 2 Mr. Freddy, Mr. Fahmi
Mar. 23, 2023 (Thu)	0600	Leave TD to the calibration area	M.V.SEAFDEC 2 Mr. Freddy, Mr. Fahmi
	0800-1200	• Preparation for calibration	M.V.SEAFDEC 2 Mr. Freddy, Mr. Fahmi
	1200-1300	Lunch	M.V.SEAFDEC 2
	1300-1500	• Calibration	M.V.SEAFDEC 2 Mr. Freddy, Mr. Fahmi
	1500-1700	• Noise measurement	M.V.SEAFDEC 2 Mr. Freddy, Mr. Fahmi
	1700-1800	Dinner	M.V.SEAFDEC 2
	1800-2400	• Field survey (Data collection)	M.V.SEAFDEC 2 Mr. Freddy, Mr. Fahmi
Mar. 24, 2023 (Fri)	2400	Leave survey area to TD	M.V.SEAFDEC 2
	0845-1015	• Software for data analyzing	Lecture room Mr. Freddy, Mr. Fahmi
	1015-1030	Coffee break	
	1030-1200	• Estimation of fish density & biomass	Lecture room Mr. Freddy, Mr. Fahmi
	1200-1300	Lunch	
	1300-1500	• Mapping for fish distribution • MSY or Potential Yield	Lecture room Mr. Freddy, Mr. Fahmi
	1500-1515	Coffee break	
	1515-1600	• Discussion	Lecture room Mr.Freddy, Mr.Fahmi
	1600-1715	• Closing	Lecture room

Contact Persons

Mr. Nakaret Yasuk
Fishing Technology Section Head
SEAFDEC Training Department
Email: nakaret@seafdec.org

Ms. Nathacha Sornwaree
Administrative Officer
Research and Development Division SEAFDEC Training Department
Email: natha@seafdec.org