



SOUTHEAST ASIAN FISHERIES DEVELOPMENT CENTER

TRAINING DEPARTMENT

REPORT ON THE SECOND REGIONAL TRAINING COURSE

FOR

FISHERIES EXTENSION OFFICERS IN MARINE CAPTURE FISHERIES

25 JANUARY TO 19 MARCH 1982

Submitted by

the Training Department,

Southeast Asian Fisheries Development Center

to

the Royal Government of the Netherlands

Samutprakarn, Thailand

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REPORT ON THE SECOND REGIONAL TRAINING COURSE
FOR
FISHERIES EXTENSION OFFICERS IN MARINE CAPTURE FISHERIES
25 JANUARY TO 19 MARCH 1982

I. INTRODUCTION

In view of the success of the first Training Course, SEAFDEC's Training Department organized the Second Regional Training Course for Fishery Extension Officers in Marine Capture Fisheries from 25 January to 19 March 1982. With the funds kindly donated by the Royal Netherlands Government under the "Programme for Studies in the Region", the course was again conducted at the premises of SEAFDEC's Training Department, Samutprakarn, Thailand, for the duration of 54 days (5 days/week, total 40 working days).

Invitations were sent to SEAFDEC's Member Countries as well as to other countries in the region i.e. Bangladesh, Brunei, India, Indonesia, and Sri Lanka, with the following anticipated number of participants:

Bangladesh	2
Brunei	2
India	2
Indonesia	2
Malaysia	5
Philippines	5
Singapore	2
Sri Lanka	2
Thailand	<u>8</u>
Total	<u>30</u>

Only six countries responded to the invitation, the other countries being unable to send participants owing to shortage of personnel. The six countries together with the number of participants (for complete list see Annex A) who attended the course were:

Bangladesh	2
Malaysia	4
Philippines	5
Sri Lanka	2
Singapore	2
Thailand	<u>8</u>
Total	<u>23</u>

II. OBJECTIVES OF THE TRAINING COURSE

The objectives of this training course, were the same as those of the first course, that is:

1. To expose extension officers from Southeast Asia to the problems facing the livelihood of small scale and coastal fishermen;
2. To familiarize them with techniques and methodology pertaining to extension work, and with the ways and means of assisting these small-scale and coastal fishermen;
3. To provide practical experience and knowledge relating to the development of coastal and inshore fisheries, with particular reference to the efficient and rational utilization of fisheries resources in these waters.

The contents of this course was, however, slightly different from that of the First Fishery Extension Course in that some additional subjects were introduced to better suit the needs of the extension services, e.g., Coastal Navigation, First Aid at Sea, and Quality Assessment of Fish. Shipboard training of longer duration was also provided for more practice in fishing operation, navigation and seamanship. Emphasis was also placed on certain subjects considered essential to the nature of the course, such as fishing technology, and fishing gear and methods. On the other hand, time spent on low-priority subjects was reduced to a minimum at the introductory level. Field trips to various fishery centers and related places were organized as an integral part of the course.

Emphasis was placed on practical rather than theoretical training in order to enhance the skill of extension officers working closely with coastal fishermen. The course was, therefore, designed to convey not only basic concepts but also practical knowledge suitable to marine capture fisheries in the region, coupled with the knowledge and understanding of various systems of fisheries extension work.

III. COURSE OUTLINE

The course comprised the following core subjects:-

1. Target Group of Marine Fisheries Extension

Participants were introduced to persons in various fishing circles to understand their basic problems. Instruction was given on the following groups:-

- 1.1 Fishing Communities
- 1.2 Fishery Cooperatives

The subjects were demonstrated by means of various field trips to fishing villages and fishermen's cooperatives for a better understanding of the actual conditions as well as practical work.

2. Principles of Fisheries Extension Work

The subject included the following basic concepts of fisheries extension work:-

- 2.1 Extension Philosophy
- 2.2 Extension Methodology
- 2.3 Extension Communication

Teaching was also accompanied by field trips to fishing villages where participants could practise what they had learnt in the class room.

3. Resources of Marine Capture Fisheries

The following subjects were offered to enhance knowledge of fisheries resources:-

- 3.1 Fishery Biology and Fish Stocks
- 3.2 Fishery Exploitation and Conservation

Field trips to the Marine Fisheries Laboratory and the Bangkok Fish Market were made to observe local fish landings and to interview fishermen. The participants were also briefed on the national programs for monitoring fish stocks and for conservation of the fisheries resources in the Gulf of Thailand at the Marine Fisheries Division of the Thai Department of Fisheries.

4. Technologies for Marine Capture Fisheries

Various subjects were included to broaden participants' knowledge in the field of extension services. The related subjects were:-

- 4.1 Fish Catching Technology
- 4.2 Coastal Navigation
- 4.3 Particulars of fishing vessels and their propulsion

- 4.4 Fish Preservation Technologies
- 4.5 Workshop Technology for Repair Work
- 4.6 Refrigeration on board
- 4.7 Work on Fishing Nets

The list of lecture subjects of this course is given in Annex B.

IV. TRAINING PROGRAM

1. Lectures and Practice

The course was conducted at SEAFDEC's Training Department all facilities and resources being fully utilized, both ashore and at sea. The training was intensive. Practice sessions were conducted mainly in the workshops, net loft, and laboratory. Five days were spent at sea on board the training purse-seiner M.V. PLATOO to practise the operation of fishing gear, navigation and seamanship, as well as marine engineering. Lectures on theoretical subjects were followed either by demonstration in the workshop and on board the training vessel, or by field trips to fishing villages. Class participation was normally carried out through discussion, assignments, and exercises. (See Annex C for work schedule, and Annex D for reference books and lecture notes employed in the course.)

External facilities were also utilized to enhance the effectiveness of the training. These included training in first aid at sea at Lerdsin Hospital at Bangkok; observation of boat building at private dockyards, and net manufacturing at Siam Brothers Net Co., Ltd.; a lecture on fuel substitution at the Ministry of Industry; and visits to the Marine Fisheries Laboratory, the Fish Market Organization and the Cold Storage Organization at Bangkok.

2. Field Trips

Participants visited various places relating to fishing activities such as fishing villages in Rayong, Choburi, and Samutsakorn Provinces; fishing communities, with and without cooperatives; and fish markets, and fish processing plants in Bangkok and Samutprakarn. Places visited during the course are given below:-

- 6-8 Feb. 1982 : Visit to Rayong Fishery Station at Ban Phe to observe the Station's workshop for fishing net and gear repairing, museum of fishing gear models and marine resource specimens collection, artificial reef construction, breeding and culture activities of sea bass, croakers, snappers, squids, and shrimps.
- Local activities were also observed to familiarize participants with the daily life pattern of Thai fishermen.
- 9 Feb. : Visit to Fish Market Organization (FMO), Marine Fisheries Laboratory, and Cold Storage Organization in Bangkok.
- 11 Feb. : Visit to boat building yards in Bangkok, i.e., The B.L.L. Shipyard Co., Ltd., Harinpanich Co., Ltd., and TECO Marine Ltd. Observation of the system and methods of boat building, equipments and facilities, and fibre-glass boat construction.
- 12 Feb. : Visit to Lerdsin Hospital, Bangkok, for lecture on First Aid at Sea, demonstration of and actual practice in artificial respiration, external cardiac massage for cases of drowning, bone fracture, bandaging, and transportation.
- 13 Feb. : Visit to Fish Market Organization in Samutsakorn to observe fish landing facilities, marketing, local fishing boats and gear.
- 20 Feb. : Visit to Siam Brothers Co., Ltd., a net making factory at Phrapradaeng in Samutprakarn Province, to observe the procedure of net manufacturing.
- 23 Feb. : Visit to the Central Engine Registration Division, Ministry of Industry, to attend a lecture on and demonstration of Fuel Substitution. The subject also included "Remote Village Electrification Project: Principle of Producer Gas and Solar Energy for Rural Development".

- 26 Feb. : Field trips to the fish processing plants in Bangkok and Samutprakarn to observe the fish processing plants, marine product canning plants and frozen sea-food plant.
- 27 Feb. (Saturday) : Excursion to "Ancient City" in Samutprakarn.
- 10-14 March : Trip to Ang Sila and Bang Sare in Cholburi Province for participation in the "Socio-Economic Survey of Fishery Households".

3. Shipboard Training at Sea

Training was carried out on board M.V. PLATOO, a 60 G.T. SEAFDEC training purse-seiner, on fishing operations using various types of fishing gear as well as on navigation and seamanship.

The cruising area was in the Gulf off the Province of Prachuab Kirikhan. Five days' training took place on board and ashore from 2 to 6 March 1982. The training began daily at 1800 hrs. when all participants boarded M.V. PLATOO for a whole night's fishing operation, returning ashore at dawn. Accommodation was booked in a hotel for the participants' day-time rest. During sailing time to and from the fishing ground and after all fishing gears had been prepared, the participants were engaged on the study of either navigation or marine engineering. The fishing operations consisted of purse-seining, trap-net fishing, and squid lift-net fishing.

V. EVALUATION

At the end of the course, a questionnaire was distributed for completion by each participant in order to determine his overall opinion of this second Extension Course in Marine Capture Fisheries. The questionnaire was designed to cover all points of view for the purpose of improving the effectiveness of future courses. Participants were asked to express their opinions freely. The results of this inquiry are shown in Annex E.

The majority of participants agreed that the course was beneficial to extension work, but noted that more time should be dedicated to practice work in the workshop or at sea. This group of participants seemed to be more energetic in field work than in class room study. In fact, more time for practice work was provided in this second course than in the first course, but apparently was still not sufficient to satisfy them. They also suggested more field trips of shorter duration each to related places, as well as longer training periods at sea. In addition many participants proposed inclusion of various subjects such as aquaculture, oceanography and electronic

equipment for fishing operations, which unfortunately go beyond the scope of training in marine capture fisheries extension.

In view of the comments received, some slight modification of the syllabus as regards the appropriate allocation of time to each subject and practice work will be considered for the third extension course. More stress will be put on fishing technology and practice than on subjects of lower priority such as marine engineering and boat building.

VI. CONCLUSION

In general, we can justly consider that all the objectives of the training were achieved. Participants were satisfied with their two-month stay and training at the SEAFDEC Training Department. They all agreed that the course had provided valuable training for the work of an extension officer. Although some of the participants were not directly concerned with extension services when they joined the course, they expressed the view that the knowledge gained was beneficial and could be applied not only to the field of fisheries extension but also to their present work.

The result of the evaluation at the end of the training course revealed a common feeling among participants that to cover several subjects within a short period of time prevented them from gaining fully from the knowledge imparted and from the practical training. They suggested either to increase the training period to more than two months, or to reduce the number of subjects to a minimum. Furthermore, it was suggested that special courses be held for intensive training in some particular fields related to fishery such as fishing gear and method; and all electronic equipment used in fishing and navigation.

Considering the suggestions made by participants in the first and second training courses for fishery extension workers in marine capture fisheries, the Training Department agreed that the time had come for more training of "specialists" in various fields of marine fishing technology rather than of "generalists" as had been done in the first-two courses. Nevertheless, since the number of fishery extension workers in most countries in the region is still far from adequate, the Training Department plans to assist in preparing the third course in 1982 as the last training course for the "generalists" (Annex F). However, in 1983 the Training Department will organize more specialized courses, in order to serve the immediate needs of specific countries in the region and thus provided more local experts to the region for further development and management of fishery resources.

LIST OF PARTICIPANTS AND LECTURERS

A. Participants

I. BANGLADESH

1. M.A. Hye
Chairman, Bangladesh Fisheries
Development Corp.,
24-25, Dilkusha Commercial Area, Mojitheel
Dacca-2, Bangladesh
2. T.K. Das
Asst. Technologist
Marine Fisheries Department
C.G.O. Bldg., Agrabad-Chittagong
Bangladesh

II. MALAYSIA

1. Johari Bin Ramli
Fisheries Extension Officer
Marine Fisheries Institute
Batu Maung, Penang
West Malaysia
2. Mohamad Shaupi Bin Derahman
Fisheries Officer
Department of Fisheries, 6th floor
Wisma Persekutuan
Kota Bharu, Kelantan
West Malaysia
3. Sinnathamby s/o Ramasamy
Asst. Fisheries Officer
Department of Fisheries, 5th floor
Baingunan Tuanku Syed Putra, Penang
West Malaysia
4. Akim Anak Bujing
Asst. Fisheries Officer
Marine Fisheries Department
P.O. Box 2243, Kuching-Sarawak
East Malaysia

Annex A

III. PHILIPPINES

LIST OF PARTICIPANTS AND LECTURERS

1. **Bernardo B. Apigo**
Jr. Fisheries Biologist
Bureau of Fisheries and Aquatic Resources
Regional Office No. 1
Philippines
2. **Artemio D. Escabarte**
Jr. Fisheries Technologist
Bureau of Fisheries and Aquatic Resources
Iligan City
Philippines
3. **Beato G. Hinaloc**
Jr. Fisheries Technologist
Bureau of Fisheries and Aquatic Resources
Regional Office No. 7, Cibu City
Philippines
4. **Pedro M. Ramos**
Jr. Fisheries Technologist
Bureau of Fisheries and Aquatic Resources
Leyte Office
Philippines
5. **Reynaldo R. Reoligio**
Jr. Fisheries Technologist
Bureau of Fisheries and Aquatic Resources
Regional Office No. 3
San Fernando, Pampanga
Philippines

IV. SRI LANKA

1. **W.A.P.S. Jayatilleke**
Fisheries Inspector
Ministry of Fisheries
Colombo-3
Sri Lanka
2. **K.G.N. Weeratunga**
Fisheries Inspector
Ministry of Fisheries
Colombo-3
Sri Lanka

V. SINGAPORE

1. Lee Boon Shuek
Asst. Primary Production Officer
Department of Primary Production
Maxwell Road
Singapore
2. Poh Leong Huat
Asst. Primary Production Officer
Department of Primary Production
Maxwell Road
Singapore

VI. THAILAND

1. Boonchuay Weawngarm
Fisheries Provincial Officer
Pitsanulok Fisheries Office
Pitsanulok, Thailand
2. Chan Suthanukool
Fisheries Provincial Officer
Nakorn Prathom Fisheries Office
Nakorn Prathom, Thailand
3. Chongkolnee Chamchang (Miss)
Fisheries Biologist
Marine Fisheries Division
Department of Fisheries
Bangkok
4. Kavi Saranakomkul
Fisheries Biologist
Phuket Marine Fisheries Station
Phuket, Thailand
5. Kiattisak Kositchaiwat
Fisheries Biologist
Extension and Training Section
Department of Fisheries
Bangkok
6. Manoj Roongratri
Fisheries Biologist
Marine Fisheries Division
Department of Fisheries
Bangkok

V. SINGAPORE

- 7. Singhanahd Prasartsilp
Fisheries Provincial Officer
Petchburi Fisheries Office
Petchburi, Thailand
Department of Fisheries
Maxwell Road
Singapore
- 8. Veera Thoobuchar
Fisheries Provincial Officer
Rajburi Fisheries Office
Rajburi, Thailand
Department of Primary Production
Maxwell Road
Singapore

VI. THAILAND

- 1. Boonchai Weungam
Fisheries Provincial Officer
Pitsanulok Fisheries Office
Pitsanulok, Thailand
- 2. Chan Sathankool
Fisheries Provincial Officer
Nakhon Phanom Fisheries Office
Nakhon Phanom, Thailand
- 3. Chongkolae Chamuang (Miss)
Fisheries Biologist
Marine Fisheries Division
Department of Fisheries
Bangkok
- 4. Kavi Saranawong
Fisheries Biologist
Marine Fisheries Division
Bangkok, Thailand
- 5. Kiatlak Kositthavaj
Fisheries Biologist
Extension and Training Section
Department of Fisheries
Bangkok
- 6. Nand Boonprati
Fisheries Biologist
Marine Fisheries Division
Department of Fisheries
Bangkok

B. Lecturers

Southeast Asian Fisheries Development Center

Training Department

1. **Dr. Veravat Hongskul**
Secretary-General and Chief of Training Department
2. **Dr. Shigeaki Shindo**
Deputy Secretary-General and
Deputy Chief of Training Department
3. **Capt. Vudhi Sudhasaneya, RTN**
Head of Training Division
4. **Mr. Tomeyoshi Yamazaki**
Head of Fishing Technology Section, and
Fishing Gear Instructor
5. **Mr. Masatake Okawara**
Fishing Gear Instructor
Fishing Technology Section
6. **Mr. Prasert Masthawe**
Fishing Gear Instructor
Fishing Technology Section
7. **Mr. Somyos Soodhom**
Fishing Gear Instructor
Fishing Technology Section
8. **Mr. Shinzo Yamamoto**
Head of Marine Engineering Section, and
Marine Engineering Instructor
9. **Mr. Mikihisa Sekioka**
Marine Engineering Instructor

Guest Lecturers

1. **Mr. Thanoo Veecharungsun,**
Director Central Engine Registration Division, and
Chairman of POWER ALCOHOL COMMITTEE
Ministry of Industry, Thailand.
(Lecturer on Fuel Substitution)

2. **Captain Prathom Boontang, RTN**
Naval Officer College
Royal Thai Navy
Bangkok
(Lecturer in Navigation and Seamanship)
3. **Mrs. Bung-Orn Saisithi**
Director, Fisheries Technological
Development Division
Department of Fisheries, Thailand
(Lecturer on Fish Handling)
4. **Mrs. Rerngrudee Prudhiarnand**
Chief, Processing Section
Fisheries Technological Development Division
Department of Fisheries, Thailand
(Lecturer on Fish Products)
5. **Dr. Poonsap Virulhakul**
Fisheries Technologist
Fisheries Technological Development Division
Department of Fisheries, Thailand
(Lecturer on Quality Assessment of Fish)
6. **Mrs. Pongpen Rattagool**
Chief, Quality Analysis and
Research Section
Fisheries Technological Development Division
Department of Fisheries, Thailand
(Lecturer on Fish Preservation)
7. **Mr. Tong Natkratok**
Chief, Fishing Vessel Development Section
Marine Fisheries Division
Department of Fisheries, Thailand
(Lecturer on Fishing Vessel and Boat Building)
8. **Dr. Kamthorn Sukapanpotharam M.D.**
Head, Surgical Section
Lerdsin Hospital
Bangkok
(Lecturer on First Aid at Sea)
9. **Mr. Kachornsak Wetchagaran**
Chief, Fisheries Economic Section
Department of Fisheries, Thailand
(Lecturer on Socio-Economic Conditions of Small Scale Fishermen)

10. Mr. Prathom Thongruay
Chief, Fisheries Cooperatives Promotion Section
Department of Cooperatives Promotion
Ministry of Agriculture and Cooperatives
Thailand
(Lecturer on Fishery Cooperatives)
11. Miss Panipa Hanvivatanakit
Fisheries Economic Section
Department of Fisheries, Thailand
(Lecturer on Fishery Cooperative)
12. Dr. Direk Rerkrai
Office of Extension and Training
Kasetsart University, Bangkok
(Lecturer on Extension Philosophy)
13. Mr. Deeprom Chaiwongkiat
Faculty of Science
Kasetsart University, Bangkok
(Lecturer on Extension Communication)
14. Mr. Adisak Srisanpakit
Evaluation Section
Department of Cooperatives Promotion
Ministry of Agriculture and Cooperatives
Thailand
(Lecturer on Extension Methodology)
15. Dr. Kamphol Adulavidhaya
Faculty of Economics and Business Administration
Kasetsart University, Bangkok
(Lecturer on Socio-Economic Conditions of Small Scale Fishermen)

List of Subjects

1. Fishery in General : Relationship between "Marine Capture Fisheries" and the other subjects of the course by Flow Chart.
Relationship between "Government" and "Fishery Scientist-Technologist".
2. Fishery Extension and Management : The nature of Fisheries Extension, Marine Fisheries Management, Social Factors and Allied Primary Industries, Objectives of Marine Fisheries Services.
3. Net Making : General concepts, definitions, materials used in the workshop, knots used in mending, braiding of fishing net.
4. Net Repair : Trimming a tear, elimination of knots on meshes repair of the simplest tear, repair of a horizontal tear, mending of a vertical tear.
5. Fishing Method of Gill Net : Introduction, Classification of gill net and the characteristics of each gill net, Factors required for gill net, Net casting and hauling methods, Specification of gill net.
6. Line Fishing Method : Line fishing gear, Classification of line fishing methods and the specification of each type of fishing gear and the operation methods. Handline fishing, Pole and Line fishing, Longline fishing, Troll Line fishing.
7. Trawl Net Design : Preliminary study of characteristics of Trawl Net construction in Thailand, Construction of two-seam trawl, Construction of four-seam trawl, Discussion on essential factors of trawl net, design of trawl net used on M.V. PAKNAM.
8. Purse Seine Net Design : Factors governing purse seine net design, Fishing methods of purse seine, Necessary conditions for purse seining, How to design purse seine net.
9. Lift Net Design (Stick held dip net) : Outline of stick held dip net (description, operation, and fishing method), Design of stick held dip net and factors to be considered.
10. Set Net Design (Pound Net) : Characteristics of Net, Fishing Ground, Fishing Method, How to design pound net.

11. Fishing Method of Purse Seine : Characteristics of Purse Seine Net, Fishing Method (school detection and fish luring), fishing operation, Measurement of sinking velocity of purse seine, Recommendation for the improvement of purse seine.
12. Fishing Vessel and Boat Building : Fundamentals of fishing boats, Classification, Characteristics, Principal Dimensions. Speed and Output of Propulsion Engine, Equipment, Trawl-Line-Purse-Seine Fishing Boats.
13. First Aid at Sea : Responsibilities at the scene of accident, Immediate first aid, Artificial respiration and External cardiac massage, Treatment for bleeding, shock, fracture, burn, wound, Bandaging, Proper transportation.
14. Basic Seamanship : Marlinspike Seamanship (knots and splices, line handling), Maritime Law, Prevention of Collision at Sea, Boat Handling (motored and sailing boats,; boat rigging).
15. Coastal Navigation : Navigating Instruments and their application, Chart Reading and its Application to actual view on land, Chart Symbols, Ship Position by Cross-Bearing, Distance Measurement, Hand-made Map of Coast Line and Landmarks.
16. Refrigeration : Principle and System, Constructions and Functions, Types, Cycles, Refrigerants, Operation, Care, and Maintenance.
17. Engine Installation, Engine Construction : How to select a fishing boat and the appropriate engine, General requirements of Fishing-Boat engine, Installation Parameters, Guide-lines for Installation, Engine Construction by Disassembling and Assembling of a diesel engine.
18. Fuel substitution : Objectives, Principle, Alcohol and blending with other fuel, Principle of Producer Gas and Production, Solar Energy for rural development. Demonstrations of engines with substitute fuels.
19. Post Harvest Technologies:
 - 19.1 Fish Handling : Food value of fish (protein, fat, mineral), fish spoilage, changes in appearance, odour and textures, rigor mortis, measurement of spoilage, chemical tests for freshness, proper handling of fish, refrigeration, general appearance of fish.

- 19.2 Fish Preservation : Smoking, boiling, drying, icing, salting, freezing, canning, packaging, chemical reagent, radiation pasteurization.
- 19.3 Fish Products : Introduction, Alternative uses of fish, General principles of how to produce good quality products for consumers, Trash-fish utilization, Cat-fish utilization, Fish product development, Small-scale fisheries development.
- 19.4 Quality Assessment of Fish : Problems in assessing quality, Methods of quality assessment (Physical test, chemical test, microbiological method, sensory method), Judgement.
20. Types of Metal and Their Uses : Materials (Ferrous and Non-Ferrous metals), Measuring Instruments (vernier caliper, micrometer caliper, dial indicator), Hand Tools (chisel, saw, files, drills, hand threading, wrenches, etc.), Machine Tools (lathe, milling machine, shaping machine, drilling-machine, power saw, grinding machine), Welding (gas and arc-weldings), Workshop practice.
21. Fishing Communities and Socio-Economic Conditions of Small-Scale Fishermen : Fishing Communities, Socio-Economic Survey on Fishing Households, Design and arrangement of survey. Identification and listing of fishing households. Interview with sample fishing households. Data processing and analysis. Fishery Cooperatives.
22. Extension Philosophy : Principal of Extension, Rural changes and poverty, Philosophy and Strategies, The Central Concept and Goals of Rural Development.
23. Extension Communication : Group approach, Use of mass media, Fishermen to fishermen.
24. Extension Methodology: Marine fisheries problems, Social factors and allied primary industries, Demonstration and development programs, Extension and appropriate technology, Extension and cooperative development.

Work Schedule

(25 January to 19 March, 1982)

25 January, Monday

- 1030 - 1200 : Opening Ceremony. Introduction of Staff and Participants. (Dr. Veravat and Capt. Vudhi)
- 1300 - 1610 : Orientation of the Course in general, film and slide show of fishing industries. (Capt. Vudhi and Mr. Okawara) Reception

26 January, Tuesday

- 0850 - 1200 : Fishery in General (Dr. Shindo)
- 1300 - 1610 : Fishery Extension and Management (Dr. Veravat)

27 January, Wednesday

- 0850 - 1200 : Study of Net Making (Mr. Somyos)
- 1300 - 1610 : Net Making Practice (Mr. Somyos)

28 January, Thursday

- 0850 - 1200 : Study of Net Repair (Mr. Somyos)
- 1300 - 1610 : Net Repair Practice (Mr. Somyos)

29 January, Friday

- 0850 - 1200 : Fishing Method of Gill Net (Mr. Okawara)
- 1300 - 1610 : Gill Net Practice (Mr. Okawara)

30 January, Saturday

- 0850 - 1200 : Line Fishing Method (Mr. Okawara)
- 1300 - 1610 : Practice in Line Fishing (Mr. Okawara)

31 January, Sunday

Rest

1 February, Monday

0850 - 1200 : Trawl Net Design (Mr. Prasert)
1300 - 1610 : Practice in Trawl Net Design (Mr. Prasert)

2 February, Tuesday

0850 - 1200 : Purse Seine Net Design (Mr. Yamazaki)
1300 - 1610 : Practice in Purse Seine Net Design
(Mr. Yamazaki)

3 February, Wednesday

0850 - 1200 : Lift Net Design (Mr. Yamazaki)
1300 - 1610 : Practice in Lift Net Design
(Mr. Yamazaki)

4 February, Thursday

0850 - 1200 : Set Net Design (Mr. Yamazaki)
1300 - 1610 : Practice in Set Net Design
(Mr. Yamazaki)

5 February, Friday

0850 - 1200 : Fishing Method of Purse Seine
(Mr. Prasert)
1300 - 1610 : Practice in Purse Seining (Mr. Prasert)

6 February, Saturday

0850 - 1610 : Field trip to Rayong Fishery Station,
and Fishing Communities. (Mr. Chumpol,
and Mr. Somsakdi)

7 February, Sunday

0850 - 1610 : Field trip to Rayong Fishery Station
and Fishing Villages (Mr. Chumpol, and
Mr. Somsakdi)

8 February, Monday

0850 - 1610 : Field trip to Rayong Fishery Station,
Fishery Cooperative Communities, and
Fishing Villages (Mr. Chumpol, and
Mr. Somsakdi)

9 February, Tuesday

0850 - 1200 : Visit to Fish Market Organization (FMO)
and Marine Fisheries Laboratory
in Bangkok (Mr. Chumpol)

1300 - 1610 : Visit to Cold Storage Organization in
Bangkok (Mr. Chumpol)

10 February, Wednesday

0850 - 1610 : Fishing Vessel and Boat Building
(Mr. Tong)

11 February, Thursday

0850 - 1610 : Fishing Vessel and Boat Building
(Mr. Tong)

12 February, Friday

0850 - 1610 : First Aid at Sea (Dr. Kamthorn)

13 February, Saturday

0850 - 1610 : Field trip to FMO in Samutsakorn to
observe fish landing, marketing, and
local fishing boats and gears
(Mr. Chumpol, Mr. Kajornsakdi)

14 February, Sunday

Rest

15 February, Monday

0850 - 1200 : Basic Seamanship (Maritime Law,
Prevention of Collision at Sea)
(Capt. Prathom)

1300 - 1610 :

Marlinspike Seamanship (line handling,
knots and splices) (Capt. Prathom)

16 February, Tuesday

0850 - 1200 : Boat Handling (Manoeuvring)
(Capt. Prathom)

17 February, Wednesday

0850 - 1200 : Coastal Navigation (Navigating Instruments, Chart Reading)
(Capt. Prathom)

1300 - 1610 : Application of Chart Reading to actual view on land, chart symbols
(Capt. Prathom)

18 February, Thursday

0850 - 1200 : Coastal Navigation (Navigating Instruments, distance measurement)
(Capt. Prathom)

1300 - 1610 : Bearing, Ship's position by cross-bearing, hand-made map of coast line and landmarks, etc. (Capt. Prathom)

19 February, Friday

0850 - 1200 : Refrigeration (Principle, types, cycles, refrigerants, etc.) (Mr. Sekioka)

1300 - 1610 : Refrigeration (Practice in operation, care and maintenance) (Mr. Sekioka)

20 February, Saturday

0850 - 1610 : Visit to Net Making Factory in Phrapradaeng (Siam Brothers & Co., Ltd.)
(Mr. Yamazaki)

21 February, Sunday

Rest

22 February, Monday

0850 - 1200 : Engine Installation, Engine Construction (Mr. Yamamoto)

1300 - 1610 : Disassembling and Assembling of a diesel engine (Mr. Yamamoto)

23 February, Tuesday

0850 - 1200 : Fuel Substitution : Principle, Alcohol and Blending, at Central Engine Registration Department, Ministry of Industry (Mr. Thanoo)

1300 - 1610 : Demonstration of engines with substitute fuel. (Mr. Thanoo)

24 February, Wednesday

0850 - 1200 : Fish Handling (Mrs. Bung-Orn)

1300 - 1610 : Fish Preservation (Mrs. Bung-Orn)

25 February, Thursday

0850 - 1200 : Fish Products (Mrs. Bung-Orn)

1300 - 1610 : Quality Assessment (Mrs. Bung-Orn)

26 February, Friday

0850 - 1600 : Field trip to Fish Processing Plants
in Bangkok and Samutprakarn
(Mrs. Bung-Orn, Mr. Chumpol)

27 February, Saturday

0850 - 1600 : Excursion

28 February, Sunday

Rest

1 March, Monday

0850 - 1200 : Types of Metal and their uses, use of
machine and hand tools (Capt. Vudhi)

1300 - 1610 : Manual Fabrication (Capt. Vudhi)

2 March, Tuesday

0850 - 1200 : Trip by bus to Prachuab Kirikhan for
training on board M.V. PLATOO in various
fishing gears and fishing operations
in the Gulf of Thailand. (Mr. Yamazaki,
Mr. Miyata, Mr. Prasert, Mr. Okawara)

1500 - 0800 : Training on board M.V. PLATOO

3-6 March,

1500 - 0800 : - ditto -

7 March, Sunday

Rest

8 March, Monday

- 0850 - 1200 : Fishing Communities (Dr. Kamphol/
Mr. Kajornsakdi)
- 1300 - 1610 : Socio-Economic Conditions of Small-
Scale Fishermen (Dr. Kamphol/
Mr. Kajornsakdi)

9 March, Tuesday

- 0850 - 1610 : Fishery Cooperatives (Mr. Prathom
Miss. Phannipha)

10-14 March,

- 0850 - 1600 : Socio-Economic Survey of Fishing
Households at Ang Sila and Bang Sare.
(Mr. Somsakdi, Mr. Chumpol, Mr. Thongchai)

15 March, Monday

- 0850 - 1610 : Extension Philosophy (Dr. Direk)

16 March, Tuesday

- 0850 - 1610 : Extension Communication (Mr. Deeprom)

17 March, Wednesday

- 0850 - 1610 : Extension Methodology (Mr. Adisak)

18 March, Thursday

- 0850 - 1610 : Evaluation (Dr. Veravat, Dr. Shindo,
Capt. Vudhi, Mr. Chumpol)

19 March, Friday

- Closing Ceremony

List of Reference Books and Lecture Notes

I. Reference Books for all participants

1. Some Technical Aspects of Small-Scale Fish Landing Facilities, by H. Lisac; SCS/79/WP/81, March 1979.
2. Marine Fisheries Extension, by David B. Thomson; ASEAN Workshop on Fisheries Extension, Manila, 18-25 February, 1979.
3. Intermediate Technology and Alternative Energy Systems for Small-Scale Fisheries, by David B. Thomson; SCS/79/WP/87, 1979.
4. Statistics for Fisheries Development, by H.A. Wheeland; SCS/76/WP/52, 1976.
5. Fishing Methods, Equipment & Deck Layout of Fishing Vessels, by David B. Thomson; SEAFDEC/TD, November 1978.
6. Technical Training Manual for Marine Mechanics and Engineers at Fisheries Training Centers, by Albin Werner Korb; FAO. RI. UNDP. INS./72/063.
7. Seamanship and Navigation, Compiled by Capt. Prathom Boontang, RTN; SEAFDEC/TD.
8. Marlinspike Seamanship, by Bureau of Naval Personnel, U.S. Government, Washington, D.C., 1953.
9. International Conference on Revision of the International Regulations for Preventing Collisions at Sea, 1972.
10. Trouble Shooting of Diesel Engine, Compiled by Shinzo Yamamoto; SEAFDEC/TD, April 1981.
11. Preliminary Comparative Studies on Mud-Skis in the Gulf of Thailand and the Ariake Sound of Japan, by Keishi Shibata and Hisaaki Takayama; SEAFDEC/TD, June 1980.
12. A Simplified Method for Calculating the Cruising Speed and Propeller Dimensions of a Small Fishing Boat, compiled by Shinzo Yamamoto; SEAFDEC/TD, September 1981.

13. Metal Works and Use of Tools, compiled by Capt. Vudhi Sudhasaneya; SEAFDEC/TD, 1982.
14. Line Fishing, compiled by Masatake Okawara; SEAFDEC/TD, January 1982.

II. Lecture Notes for all participants

1. Fishery Cooperatives, by Pathom Thongruay; SEAFDEC/TD.
2. Fishery Cooperatives, by Panipa Harnvivatanakit; SEAFDEC/TD.
3. Fishing Communities, by Tadashi Yamamoto; SEAFDEC/TD.
4. Fishery Cooperative Associations, by Tadashi Yamamoto; SEAFDEC/TD.
5. The Accident Victim, Emergency and Disaster, by Dr. Kamthorn Sukapanpotharam; SEAFDEC/TD.
6. Boat Building in Thailand, by Tong Nadgratok; SEAFDEC/TD.
7. Fishing Vessel Design and Construction, Part I, II, by Tong Nadgratok; SEAFDEC/TD.
8. Fisheries Resources and Optimum Utilization, by S. Shindo and S. Hayase; SEAFDEC/TD.
9. Fish Handling, Preservation and Processing, by Bang-orn Saisithi; SEAFDEC/TD.
10. Fish Product, by Rerngrudee Prudhiarnand; SEAFDEC/TD.
11. Fish Preservation, by Pongpen Rattagool; SEAFDEC/TD.
12. Quality Assessment of Fish, by Poonsap Virulhakul; SEAFDEC/TD.
13. Stick-Held Dip Net, by T. Yamazaki; SEAFDEC/TD.
14. Brief Study of Refrigeration, Refrigeration Simulator, Refrigerants and their uses, by M. Sekioka; SEAFDEC/TD.

15. Engine Installation and Construction, by S. Yamamoto; SEAFDEC/TD.
 16. Braiding and Mending of Fishing Net, by S. Soodhom; SEAFDEC/TD.
 17. Gill Net Fishing, by M. Okawara; SEAFDEC/TD.
 18. Purse Seine Net Design, by T. Yamazaki; SEAFDEC/TD.
 19. Set Net Design, by T. Yamazaki; SEAFDEC/TD.
 20. The Technology of Small-Scale Ice Making, by Hinko Lisac.
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Results of Inquiry by Questionnaire

1. How does the course suit you? In views of-
- 1.1 Training duration : too short (13), too long (0), fair (10).
 - 1.2 Number of subjects : too many (14), too few (0), fair (9).
 - 1.3 Subjects : the content is too brief (11), too long (6), appropriate (6).
 - 1.4 Method of training : need more theory (3), more practice (20), efficient, inefficient, etc.
 - 1.5 Other comments : (e.g., training facilities, training site, etc.)

All right

2. Is there any particular subject, in your opinion, which should be included for Fishery Extension Service in Marine Capture Fisheries?

- For Yes (15) :-
- 1. Feasibility Study and Fishing Grounds.
 - 2. Improvisation of local materials to construct simple fishing gear.
 - 3. Actual construction of a purse seine, more intensive practice on fishing gear and modern electronic equipments such as sonar, fish finder, echo-sounder, radar.

3. Is there any subject of this course which you feel does not directly concern your field of work as an extension officer?

- For Yes (9) :-
- 1. Types of metal and their uses
 - 2. Fuel Substitution
 - 3. Boat building
 - 4. Marine engineering

Annex B

- 4. Are study trips to places related to fishery beneficial to you? If so, in what respect? Please comment if not.

For Yes (23) only accommodation at hotels during the trips was below standard. Duration of each trip should be shorter, but there should be more frequent trips.

- 5. Which subjects are most relevant to the extension service in your local area of operation? Please state the location of area(s):

1. Extension philosophy, methodology, communication. (need more training aids in Extension Communication).
2. Fishing gear, esp. purse seine.
3. Post harvest technology, fish handling, product processing and preservation.

- 6. Back at home, are you continuing to work in the field of Fishery Extension?

No (10)

Yes (13)

- 7. If not, to what field are you expecting to be posted?

1. Fisheries biology.
2. Fish population research.
3. May be posted to Fishery Extension.
4. Some participants have no idea where they will be posted.

- 8. What part of the year (month) is most suitable to your home office for sending participants to take part in such a course abroad?

Scattered throughout the whole year. Majority however gives April to July.

2. Fuel Substitution

3. Boat building

4. Marine engineering

9. Any suggestion for course improvement, e.g. need for more detailed instruction or more lecture periods on any particular subjects (Post-Harvest Technology, Fishing Gear and Methods, Navigation, Marine Engineering, Refrigeration, etc.), more practice on
....., more shipboard training, or any other relevant matter.
 1. Course is too short, recommended 4 to 6 months.
 2. More actual operation on board the vessel, actual construction of all fishing gears.
 3. There should be some tests or exams every week.
 4. Communication gap.

PROPOSED GENERAL SUBJECTS FOR THE THIRD REGIONAL TRAINING COURSE
FOR FISHERIES EXTENSION OFFICERS IN MARINE CAPTURE FISHERIES
26 July to 17 September, 1982.

Subjects and Practice

1. Fishery in General
2. Fishery Extension and Management
3. Trawl Net Design and Practice
4. Purse Seine Net Design and Practice
5. Lift Net Design and Practice
6. Set Net Design and Practice
7. Line Fishing Method and Practice
8. Fishing Method of Gill Net and Practice
9. Fishing Method of Purse Seine and Practice
10. Net Making and Practice
11. Net Repair and Practice
12. Seamanship (Maritime Law, Prevention of Collision at Sea, Marlinspike, Boat Handling, etc.)
13. Coastal Navigation (Navigating instruments and application, Chart reading, navigational symbols, distance measurement, locating ship positions by cross-bearing, etc.)
14. Fuel Substitution (Principle, Alcohol blending with other fuels, Production of Producer Gas, Solar Energy for rural development)
15. First Aid at Sea
16. Fish Handling, Products, and Preservation
17. Fishing Communities
18. Survey on Socio-Economics of Fishing Households

19. Socio-Economic Conditions of Small-Scale Fishermen
20. Extension Philosophy, Communication, Methodology

Proposed Field Trips

1. Marine Fisheries Laboratory and Bangkok wholesale fish market
2. Cold Storage Organization
3. net making factory
4. Rayong Fishery Station, and Samutsakorn fish market
5. fisheries cooperative communities and fishing villages in Southern Thailand
6. fish processing plants in Bangkok and Samutprakarn
7. a survey on the Socio-Economics of Fishing Households

Sea Cruise

The Training vessels M.V. PLATOO and M.V. PLALUNG will be used for one week's training in various fishing gears and fishing operations, as well as in coastal navigation and seamanship in the Gulf of Thailand.