

# **TRAINING PROGRAMS OF SEAFDEC AQUACULTURE DEPARTMENT**

**J. Honculada-Primavera**

Aquaculture Department

Southeast Asian Fisheries Development Center

Tigbauan, Iloilo, Philippines

## **ABSTRACT**

With training as one of its three mandated functions, the SEAFDEC Aquaculture Department offered its first training course in 1974. Since then it has trained some 6 519 participants in various degree and non-degree programs. The degree courses are MS. Fisheries (Aquaculture) and M. Aquaculture in collaboration with the University of the Philippines in the Visayas.

The non-degree programs include regular short-term courses, on-site seminars internship training and practicum for graduating students. The "hands-on" short-term courses cover Prawn Hatchery and Nursery, Marine Finfish Hatchery, Brackishwater Pond Culture, Sanitation and Culture of Bivalves, Freshwater Aquaculture, Aquaculture Management, Aquaculture Engineering, and Aquaculture for Social Scientists. A profile of 637 1982-1986 training participants show 82.3% from Southeast Asia, 79% male and 57.5% from government sector.

The paper discusses planning and implementation of training programs, funding support (Japanese Government, International Development Research Centre of Canada, FAO Network of Aquaculture Centres in Asia), and future trends.

## **INTRODUCTION**

Research, training, and information dissemination are the three mandated functions of the Southeast Asian Fisheries Development Center Aquaculture Department (SEAFDEC AQD).

The strength of the AQD training program is derived from experience in research, training, and exposure to the industry. The Department has some 80 professional staff with masteral and doctoral degrees

who have published more than 200 papers in various scientific journals and conference proceedings. It has also sponsored 16 national, regional and international conferences, seminars and workshops on aquaculture research and development.

Parallel to research has been the training program with the first short-term course offered in 1974. Lecturers and instructors are drawn from the research staff. Many of the research facilities including laboratories, hatcheries, nurseries, ponds, pens and cages, and library services are also utilized for training. Moreover, the 13-year lead time has enabled the Department to develop training facilities (audiovisual equipment, training laboratories, and ponds), and manpower (a core training staff) exclusively for training purposes.

In addition, AQD trainees have access to private sector practices in the thriving aquaculture industry in the Philippines. Given the country's extensive coastal areas, the potential contribution of training to aquaculture development cannot be underestimated. At the regional level, training is even more significant as Asia is considered the cradle of aquaculture, and contributed around 80% of the total 1984 world aquaculture production of 10.2 million mt.

## **TRAINING PROGRAMS**

The training programs of SEAFDEC AQD consist of a degree program and four non-degree offerings: regular short-term courses, on-site seminars, internship, and student practicum. The practicum and on-site seminars are exclusively national while internship of degree programs are open to international participants.

The regular short-term courses are "hands-on" 4- to 7-week technician courses conducted in any of the Department stations in Tigbauan and Leganes, Iloilo and in Binangonan, Rizal, and are open to national and international participants.

The 3-day on-site seminar has been designed for fish farmers and other aquaculture entrepreneurs who have neither means nor time to come to AQD. Organized upon the request of local aquaculture associations and in collaboration with the Department of Agriculture Bureau of

Fisheries and Aquatic Resources, this outreach activity aims to bring the latest aquaculture technologies to the farm site.

Internship training is for participants with some aquaculture background either from previous research or industry experience or upon completion of a short-term course and who need further specialization in such areas as nutrition and feed formulation, proximate analyses of feeds, disease diagnosis, plankton culture, and instrumentation. Practicum or "on-the-job" training is designed to complete the 400 to 800 practical hour requirement of the Philippine government for graduating students in fisheries and related fields in order to supplement their theoretical knowledge.

The academic program in collaboration with the University of the Philippines in the Visayas, which grants the degrees, includes the two-year M.S. Fisheries (Aquaculture) program which requires a thesis and the one-year M. Aquaculture program. The latter is also called the Training Course for Senior Aquaculturists in Asia and the Pacific and is supported by the FAO Network of Aquaculture Centres in Asia through fellowships, equipment, and personnel.

Table 1 and Figure 1 summarize the various training programs of SEAFDEC AQD from 1974 to 1986 which show a total of 6776 participants and 6399 man-months. The on-site seminar leads in terms of number of participants trained (51%) but has only around 7% of total man-months because of its short duration. Next are the short-term courses and the student practicum with 29% and 14%, respectively, of the total number of participants.

The degree program has the greatest number of man-months (34%) but constitutes only 3% of the total participants reflecting its 1- to 2-year period. Also ranking high in man-months are the 4- to 7-week short-term courses and the 2-month student practicum at 24% each.

### **Short-Term Training Courses**

Forming the centerpiece of AQD training, the regular short-term courses are characterized by a mix of 80-90% laboratory exercises, practical/field work and field trips, and 10-20% lectures.

Table 1. Summary of participants and man-months of the training programs of the SEAFDEC Aquaculture Department, 1974-1986.

	No.	%	Man-month	%
<b>A. National</b>				
1. Student practicum	925	13.6	1 512	23.6
2. On site seminars	3 481	51.4	434	6.8
3. Short-term courses	1 065	28.7 <sup>a/</sup>	469	23.5 <sup>a/</sup>
Sub-total	5 471		2 415	
<b>B. International</b>				
1. Internship	191	2.8	748	11.7
2. Degree program	231	3.4	2 201	34.4
3. Short-term courses	883	28.7	1 035	23.5
Sub-total	1 305		3 984	
TOTAL	6 776	100.0	6 399	100.0

<sup>a/</sup>Includes both national and international programs.

## Areas

The five areas offered at present are (1) Prawn Hatchery and Nursery, (2) Marine Finfish Hatchery, (3) Brackishwater Pond Culture, (4) Sanitation and Culture Techniques of Tropical Bivalves, and (5) Freshwater Aquaculture. Other courses occasionally offered are Natural Food Culture, Aquaculture Engineering, and Aquaculture Management.

Among the various courses, Brackishwater Pond Culture and Prawn Hatchery lead in both participants and man-months (Fig. 2) reflective of both the extensive coastal areas and the recent heightened interest in prawn culture in the country and the region.

## Timetable

The activities of a training course are numerous and varied:

1. *Scheduling.* The choice and scheduling of courses within a

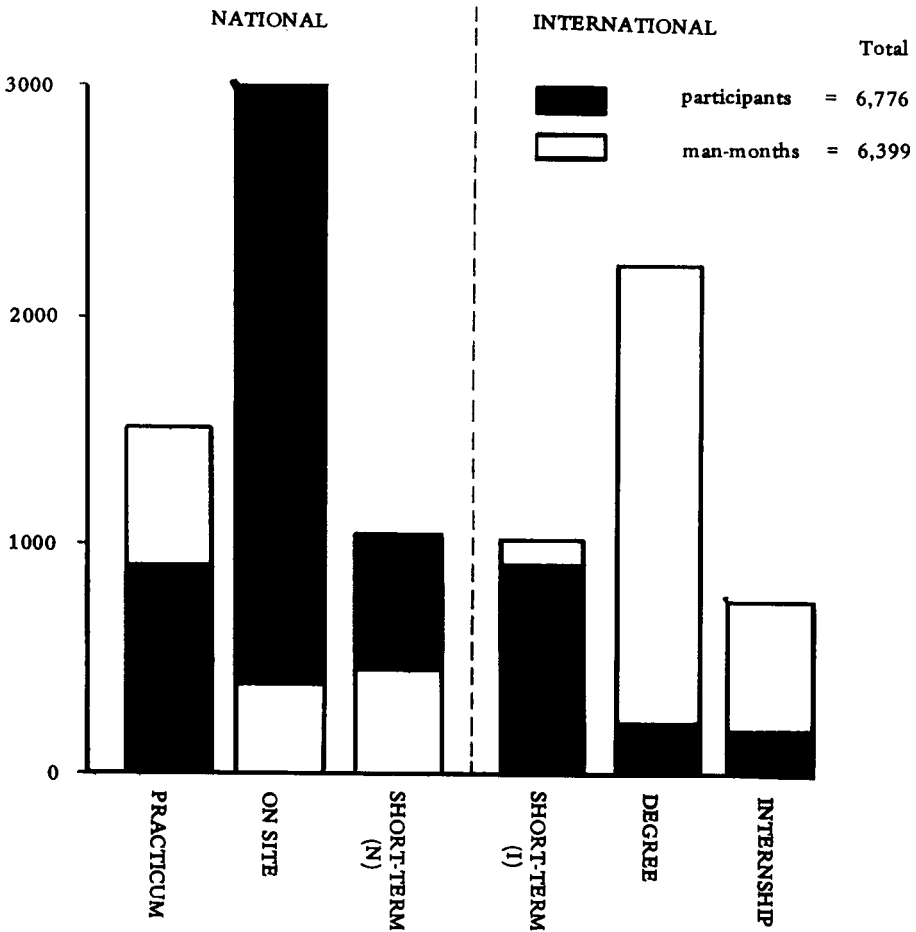


Fig. 1. Summary of participants of the SEAFDEC Aquaculture Department training program, 1974-86

given year are based on demand in terms of industry feedback and the number of applications received in previous year, seasonality of aquaculture commodity, availability of faculty and accommodations. Scheduling is done at least six months in advance to give lead time for announcements.

2. *Circulation.* Announcements of the scheduled training courses are made through an extensive mailing list and through mass media.

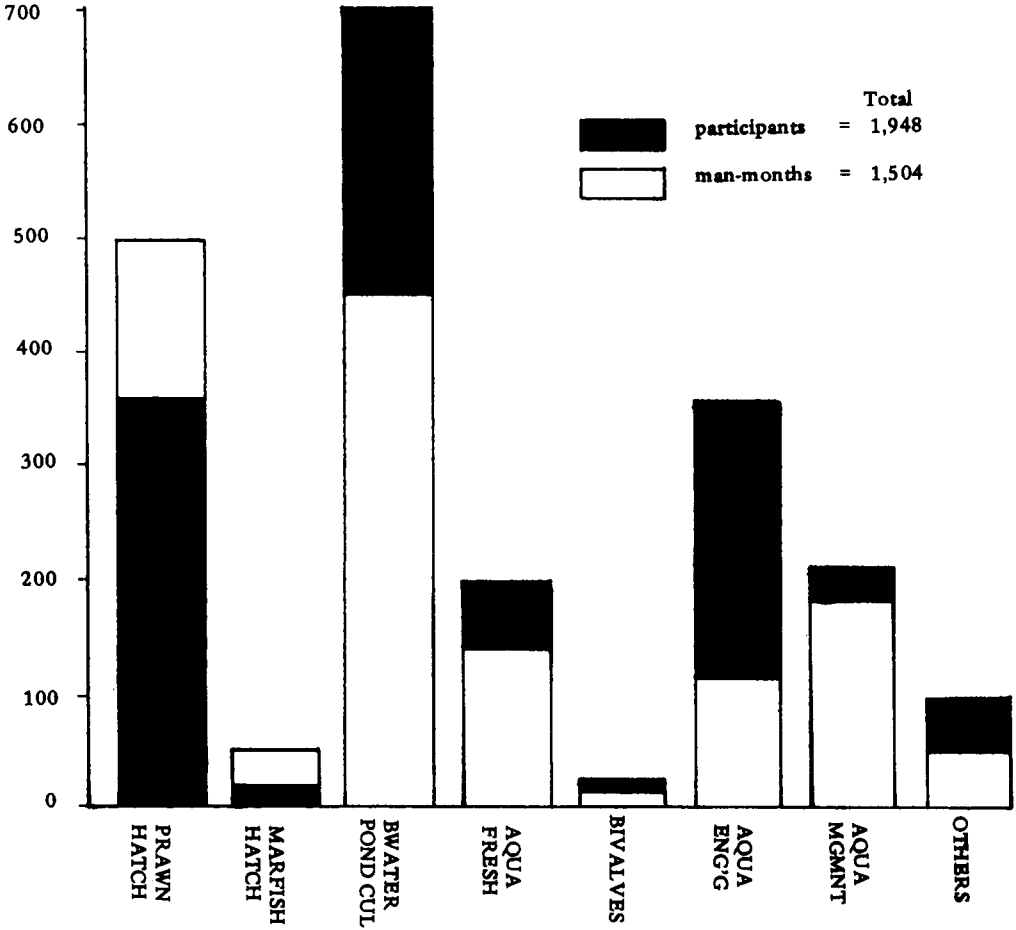


Fig. 2. Summary of participants/man-months of short-term courses, SEAFDEC Aquaculture Department, 1974-86

- Screening for admissions/fellowships.* Three basic qualifications for applicants are a college degree in fisheries or related fields or background in aquaculture; proficiency in English, the medium of instruction; and good health. If the number of qualified applicants exceeds the 20-24 slots per course, other secondary factors are considered. These include age (25-55 years), sex (female), and sector (government). The bias for females is because of the predominantly male profile (79% of 637 trainees, 1982-1984) of participants. The preference for public sector applicants is due to the "multiplier effect" of training trainors such as government fisheries extension workers.

At this time, participants are also screened for available fellowships which provide financial support in form of air fare, stipend, and various allowances from such donors as the Government of Japan and the International Development Research Centre (IDRC) of Canada.

4. *Preparation.* Prior to the start of a given course, the assigned Course Officer prepares a schedule of activities (lectures and practical work), equipment, supplies and materials, stocking of a demonstration pond, and other facilities. Lecturers and instructors from the Department research staff and from the outside (academe, private sector) are also selected.
5. *Course proper.* This covers opening ceremonies and orientation; lectures, practicum and field trips; panel discussions; written and oral examinations; course evaluation and closing ceremonies.
6. *Non-technical aspects.* Because of the live-in nature of the short-term courses, the non-technical activities also require attention. These include arrangements for arrivals and departures, travel (visa, tickets), opening and closing ceremonies, stipend and allowances (for fellows), health and accident insurance, accommodations and meals, banking and communications, cultural tours, socials such as picnics and parties, and group dynamics.
7. *Course evaluation.* This includes evaluation of lecturers, instructors, lodging, meals, and overall course assessment.

## IMPACT

The impact of AQD's continuing training program may be gauged in terms of aquaculture policy and aquaculture production in the region. Figure 3 shows that out of a total of 1305 participants and 3984 man-months for the international training programs, 76.4% of trainees (997) and 77.3% man-months (3079) came from Southeast Asia.

### Policy

Many of AQD's training alumni, particularly from the degree programs now help formulate national and regional policies in aquaculture

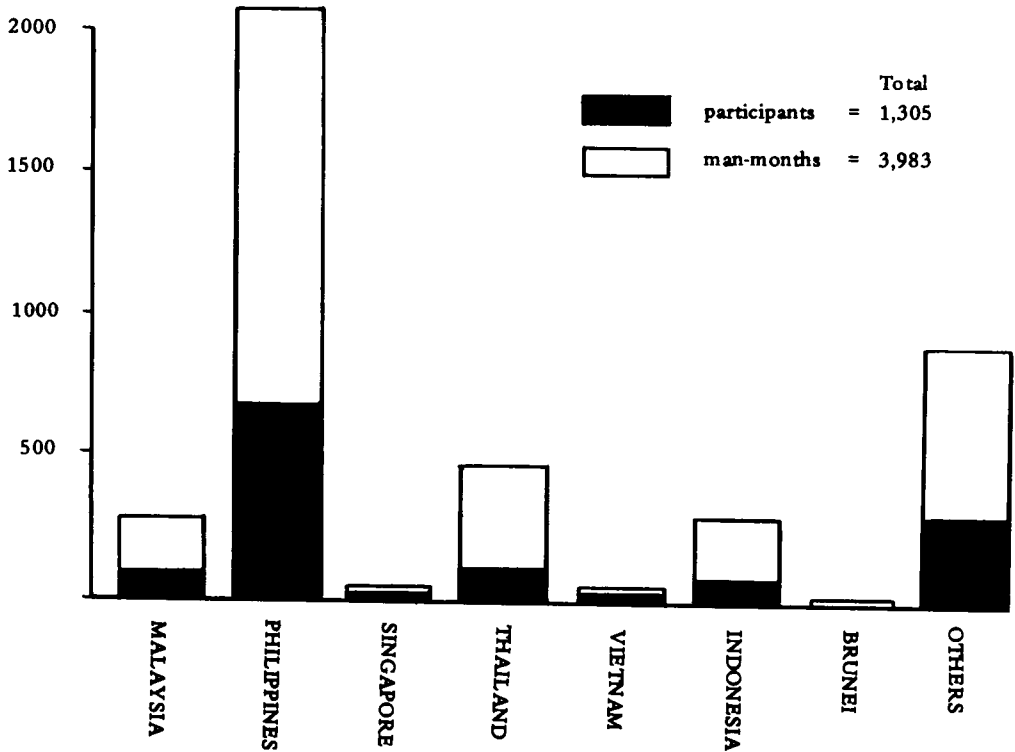


Fig. 3. Summary of participants/man-months of the SEAFDEC Aquaculture Department international training program, 1974-86 by country

and fisheries in their respective countries.

### Production

The Southeast Asian region shows a 100% increase in aquaculture production from 1975 to 1983 compared to only 20% from capture fisheries for the same period (Rabanal 1987).

1. *Prawn Hatchery.* In the Philippines, production of prawn (*Penaeus monodon*) fry increased from 3 million in 1974 to approximately 100 million in 1983 (Primavera 1985) to more than 200-300 million at present.
2. *Pond Culture.* Average yearly brackishwater pond production of milkfish in the Philippines has increased from 300 kg/ha in the mid-1970's to more than 1 000 kg/ha at present.



## FUTURE DIRECTIONS

### Short-Term Courses

There will be a continued demand in the country and the region for the technician courses, particularly Prawn Hatchery and Brackishwater Pond Culture. With intensification of aquaculture, there will be a need for training in such specialized topics as Fish Diseases and Natural Food Culture.

### On-Site Seminars

The Philippine Government through the Department of Agriculture and Food has focused on the need of small fish farmers. Therefore, future efforts will emphasize the on-site seminars as a means of reaching out to small farmers in the areas of pond culture and mariculture of seaweeds, bivalves, and finfish.

### Major Training Courses in the Region

SEAFDEC AQD's strong offerings in marine seed production (prawn and finfish) and brackishwater culture can be seen from the popularity of these courses (Fig. 2). Singapore is offering courses in net-cage (marine) fish culture and bivalve microbiology while Thailand has courses in freshwater and marine shrimp hatchery.

Perhaps a regional workshop may be useful to evaluate past training programs, to determine future needs, and to rationalize the various training efforts in the region.

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