

**SEAFDEC FISHERY STATISTICAL BULLETIN FOR
THE SOUTH CHINA SEA AREA**

by

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1. INTRODUCTION

At the regional level, the Southeast Asian Fisheries Development Center (SEAFDEC) has initiated a fishery statistical program as early as 1976. The Fishery Statistical Bulletin for the South China Sea Area is being published annually by SEAFDEC since 1978 starting with the statistics for 1976. The Bulletin is aimed at providing reliable and comparable fishery statistics with standardized definitions and classifications to facilitate the exchange of information for the management of fishery resources and the planning of various fishery development programs for countries bordering the South China Sea. It has been recognized as a valuable source of reference on fishery statistics in the region and is well-accepted by all organizations and agencies as well as personnel concerned with the management and development of fisheries in Southeast Asia.

2. DEVELOPMENT OF SEAFDEC FISHERY STATISTICS PROGRAM

During the first SEAFDEC Technical Workshop on Fishery Statistics, convened in 1976, SEAFDEC agreed to arrange a working party comprising international experts and national statisticians to finalize the content and format of the proposed Fishery Statistical Bulletin for the South China Sea Area.

Thus, the Second Technical Workshop on Fishery Statistics was convened in 1977 in order to: establish a clear definition for every statistical item based on FAO definitions, if available; review the proposed statistical tables and to layout the exact format of each table; examine and finalize classifications to be used for the Bulletin and to establish a clear definition of each statistical category; and work out questionnaires by which data required for each table are to be reported by the national fishery offices.

Then the Third Technical Workshop on Fishery Statistics was convened in 1978 in order to: review the first issue of the Bulletin with a view of improving its contents for the subsequent issues; and exchange views and experiences on national fishery statistics with particular reference to the collection of statistics on small-scale fishery.

In 1979, the Fourth Technical Workshop on Fishery Statistics was convened in order to review the second issue of the Bulletin with a view of improving its contents for the subsequent issues, and to exchange views and experiences among national fishery statisticians and researchers as well as stock assessment specialists, on matters with particular reference to fishing effort statistics.

The Fifth Workshop convened in 1980, discussed among others, stock assessment and relevant statistics particularly catch-effort data. The results of the Workshop were further discussed during the Seminar on Stock Assessment of Pelagic Resources with Emphasis on Shared Stocks which was held in 1981. The Seminar, which aimed to improve the existing method for stock assessment of the pelagic fisheries in the region also recognized the usefulness of compiling catch and effort data in relation to stock assessment of the fishery resources for the area.

In 1986, the Sixth Regional Workshop on Fishery Statistics was convened to: discuss the requirements for fishery statistics of fishery administrators and researchers in each participating country; review current practices on the collection and compilation of fishery statistics in each participating country and exchange experience in improving the fishery statistics; review the contents of the Bulletin and suggest improvements for the convenience of various users; and discuss constraints in improving fishery statistics in the region.

The Seventh Regional Workshop on Fishery Statistics was organized in 1989. The workshop aimed to: examine the methods by which statistics are collected in participating countries, their coverage and reliability; consider means to encourage the cooperation between statistical collecting agencies, e.g., SEAFDEC and FAO and to examine the possibility of a joint approach with national authorities for data collection; and review special problems in the collection and classification of data.

Thus, for the period from 1976 to 1989, seven regional workshops were organized from which a positive outcome was the Annual Fishery Statistical Bulletin for the South China Sea Area, published by SEAFDEC. In summary, the development of statistics program in the region tackled in the workshops discussed the following:

- a) standard classifications and definitions of fishery statistics for every statistical item based on FAO definitions, if available;
- b) the standard units of measurement used in the Bulletin;
- c) the standard symbols and abbreviations used throughout the tables in the Bulletin;
- d) the aggregated summary of fishery production into sub-sector of marine fishery, inland fishery and aquaculture;
- e) the classification of fishing establishments by type of management;
- f) the aggregated aquaculture production statistics into sub-sector of mariculture, brackishwater culture and freshwater culture by type of culture;
- g) the classification of disposition of catch which should follow FAO's classification for the three sub-sectors;
- h) the revised and modified classification;
- i) the adopted classification of fishing boat;
- j) the adopted standard classification of fishing gears;
- k) the retention of statistics on export and import in terms of countries of destination and origin only for the top ten most valuable fishery commodities;
- l) the provision of statistics on marine fishery by sub-areas;
- m) the inclusion of a comparative data on general demographic, geographic and economic conditions of the countries concerned;
- n) the inclusion of statistics on price of fresh fish and summary statistics by type of fishing gears;
- o) the revised statistics on export by countries of destination and import by countries of origin;

- p) the inclusion of a brief diagrammatic presentation and analysis of the major statistics;
- q) the inclusion of catch-effort statistics in the Bulletin;
- r) the revision of the current practices for the collection and compilation of fishery statistics in each participating country;
- s) the amended standard classification for fishing gear in the region;
- t) the revision of the standard classification of fish species;
- u) the revised species classification for small tuna;
- v) the accepted definition of aquaculture and fish propagation;
- w) the agreement to publish the catch-effort statistics for the South China Sea Area separately from the Bulletin; and
- x) the revision of the standard classifications of fishing gear and species in order to meet the current situation of fisheries in the region.

Other issues tackled during the series of workshops also included the following:

- a) the need to establish an appropriate classification for aquaculture;
- b) the revised definition of fisheries and aquaculture and development of statistical tables suitable for comparative analysis of productivity among the countries concerned;
- c) the examination of the methods by analysis of productivity among the countries concerned;
- d) the examination of the methods by which statistics are collected in participating countries, their coverage and reliability;
- e) the adoption of the geographical basis for reporting of data as proposed by FAO, i.e., the boundaries of fishing areas 57 and 71 with several minor modifications; and
- f) the revision of the classification of marine species and the modification of the SEAFDEC codification of species in line with the International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP).

Nevertheless, there existed a growing demand to improve the content of the Bulletin in order to meet the requirements of fishery administrators and researchers in the region.

3. THE 1994 REGIONAL WORKSHOP ON FISHERY INFORMATION AND STATISTICS IN ASIA

The Regional Workshop on Fishery Information and Statistics in Asia was convened in 1994, in collaboration with the ASEAN-EEC Aquaculture Development and Coordination Programme (AADCP), the Asia and Pacific Commission on Agricultural Statistics (APCAS), the Bay of Bengal Programme (BOBP), the FAO Fisheries Department, the FAO Regional Office for Asia and the Pacific (FAO/RAPA), the Mekong Committee, the Network of Aquaculture Centres in Asia-Pacific (NACA), and the Strategy for International Fisheries Research (SIFR). The Workshop aimed to:

- a) review the current status of fishery information and statistics programs and services available to users in Asia;
- b) discuss the requirements for improvements of the collection, compilation and dissemination of fishery and aquaculture statistics information in the region; and

- c) recommend ways and means for international cooperation and coordination in supporting and supplementing national efforts in information dissemination and exchanges.

A suggestion was presented to this Workshop by the SEAFDEC/Marine Fisheries Research Department (SEAFDEC/MFRD), to amend the classification of fishery commodities in the Statistical Bulletin. The amendment was based on the results of a survey on fish products in Southeast Asia which SEAFDEC/MFRD conducted in 1985 and 1989. Specifically, the suggested amendments were as follows:

- a) Product categories should include "powdered/flaked" as this is now produced in Thailand as prawn dust and in Malaysia as fish floss;
- b) Under Fish Processing, Dried/salted/smoked category should be changed to "Dried/smoked" since salting is a necessary part in processing; and
- c) Listing of fish products in the Sections on Disposition of Fish and Fish Processing should include "Cured and Comminuted Products," and that Comminuted should be reclassified into "Surimi and other Comminuted Products."

SEAFDEC/MFRD further proposed that the definition of items listed under "Miscellaneous Category" be clarified, as cultured aquarium plants and seaweeds are utilized differently. Seaweeds, for example is important commercially for human food. Brown algae, on the other hand, is used either as human food, animal feed or as fertilizer. Specifically, it was also suggested that data on red seaweeds of Southeast Asia be recorded in a separate column to give emphasis on this products which is gaining popularity in the region.

The Workshop discussed the actions required to improve the collection and compilation of fishery statistics in Asia, based on the problems and constraints identified by the participating countries. Recommendations were brought up for the national as well as for the regional and international levels. At the regional and international levels, the recommendations were as follows:

- a) FAO in cooperation with SEAFDEC should work on the standardization of the classification used for collating fishery products, production and fish trade statistics for the region;
- b) In order to fully utilize the potentials of computerization, the current wide diversity of computer hardware and software used by the national agencies should be made compatible;
- c) Compatible standard procedures and formats should be developed for reporting fishery statistical data at regional level using electronic and magnetic media. FAO/RAPA should organize such a work in cooperation with SEAFDEC; and
- d) Participating countries should strive to submit complete and accurate data, and to make use of the database package developed by FAO and SEAFDEC for faster reporting of data.

Specifically for the Fishery Statistical Bulletin for the South China Sea Area, the classification of fishery commodities on disposition of catch, fish processing, and exports by fishing commodity should be revised as proposed by SEAFDEC/MFRD.

As follow-up to the recommendations of the 1994 Regional Workshop on Fishery Information and Statistics in Asia, the implementation for the SEAFDEC Fishery Statistics Program had already been carried out to some extent. The Fishery Statistical Bulletin for the South China Sea Area was revised taking into consideration the new classification of fishery commodities on disposition of catch, fish processing and exports by fishing commodity following the proposal by SEAFDEC/MFRD.

4. DATA COLLECTION AND COMPILATION

Data for the Bulletin are collected using a set of questionnaires. Together with the notes for their completion, the questionnaires are sent to the participating countries at the beginning of each year with the exception of Cambodia. For Indonesia, two separate questionnaires are sent to the Directorate General of Fisheries and to the Central Bureau of Statistics.

The completed questionnaires are returned to SEAFDEC by the participating countries. The data received from each country are checked against the entries in a country's yearbook, i.e., the Fishery Statistical Yearbook as in the case of Indonesia and Taiwan, if available. The data are then ~~compiled~~ and processed by SEAFDEC using Microsoft EXCEL software. Since the compilation of data has not yet been possible for Vietnam and Cambodia, the statistics on their annual fishery production are obtained from the FAO Yearbook of Fishery Statistics.

5. PROBLEMS, CONSTRAINTS, AND RECOMMENDATIONS

The major problem in the publication of the Bulletin is the timing and the long delay in returning the questionnaires causing much reduced value of the statistics to the users. Other problems included submission of incomplete and incorrect information.

In order to expedite the publication of the Bulletin, statisticians from the participating countries are encouraged to submit data to SEAFDEC within the indicated submission period, i.e., not later than July of each year. Another way to solve this problem is to fully utilize the potentials of computerization. However, this would need harmonization of the current wide diversity of computer hardware and software used by the national agencies which should be made compatible. Moreover, compatible standard procedures and formats should be developed for reporting fishery statistical data at regional level using electronic and magnetic media through the cooperation of FAO and SEAFDEC.

Also, the staff responsible for compiling the questionnaires should check carefully all data before these are submitted to SEAFDEC. Furthermore, national agencies responsible for fishery statistics in each country should accomplish all items in the questionnaires with the available data. In addition, the latest issues of the respective country's National Yearbook of Fishery Statistics, if available, should be provided as early as possible to SEAFDEC, in order to facilitate compilation and counter-checking of the data.