

1. FACILITY

The INFONET system was contracted again in 1979 for ICCAT data management. The conditions of the contract were revised this year so that the total annual cost of the system was set at 1,440,000 pesetas. (This was equivalent to USA \$20,000 based on the exchange rate at the time the contract was made. However, at the current exchange rate the amount increases to \$22,000.) If the work executed by the system exceeds this set amount by more than 20%, the Commission agreed to pay 80% of the exceeding cost. It is foreseen that the Commission will end this one-year contract within the agreed limit.

2. DATA BASES

At present four data base categories are maintained:

- a) TASKI - Task I data. Nominal annual catch by country, gear, species, area, and year make up one record. ALADIN language is used for easy retrieval.
- b) CATEFF - Originally an ALADIN data base was created for Task II catch and effort data. However, for the convenience of data entry, and especially for economic reasons, many new added data are kept in binary files created by FORTRAN programs. Catch by species and effort, by the smallest area and time breakdown available (mostly 1° x 1° or 5°x 5° areas and by month or by quarter) by flag, by gear form a record.
- c) FREQ - Again an ALADIN data base was originally created. However, all new data are kept in binary files created by FORTRAN programs. A record consists of size frequencies by species, by flag, gear, smallest area and time stratum available.
- d) Tagging file - All records are kept in a binary file created by FORTRAN programs. A record consists of tag release or recovery information. Both release and recovery data are kept in the same file.

Besides the aforementioned, catalogues of the data contained in the files were maintained on cassette tape.

3. UPDATING

a) TASKI data base

This base is very well organized and was updated in 1978. However, the major changes agreed upon at the recent Bluefin Workshop made it necessary for the Secre-

tariat to incorporate these corrections to past data in the base. This was done in October, 1979.

In addition to the aforementioned major work, only updating with the latest data received by the Secretariat was necessary.

b) Catch and effort and size frequency bases

The data bases, as initially created in 1977 up to 1975 data, had been considerably behind in terms of new data received by the Secretariat. Besides, as the bases were prepared in somewhat of a rush and involved copying many of the magnetic tapes from various laboratories, there were still many errors to be corrected.

During 1979, all the data in the bases were carefully checked against the original hard copies of the data; the errors were corrected and missing information was added. This procedure was time consuming and costly. Except for bluefin data (particularly for biological) the data bases and files have been thoroughly revised up to 1977 and are almost complete for 1978. All the data which the Secretariat has received in the last two years (up to September 1979) were added to the file. We are very grateful to CRO, CNEXO, FSFRL and the NMFS for providing so much of the data on magnetic tape which facilitated the updating work of the Secretariat.

c) Tagging file

The tagging files still have to be completed. All the release data have been gathered, except for the Norwegian bluefin tagging and FIS tropical species tagging information. As the CRO-Dakar is revising the release file for the FIS tagging program, the Secretariat is waiting for those results to be provided.

Most of the recoveries are available at the Secretariat and the file is being prepared at present.

4. PROCESSING OF RAW DATA

This year the following raw data were processed by the Secretariat system:

1. ICCAT port sampling - All landing data, logbook abstracts and biological sampling data were processed (Statistical Series-7).

2. Tema-based sampling - All the raw data (as a result of the Fisheries Research Unit of Ghana field sampling program) were received by the Secretariat in August. We verified, prepared the data entry and processed the data. This year, the Secretariat tried to use catch information recorded in the biological sampling sheets to compile catch and effort data by area. Fishing efforts were derived from date of departure from and the date of return to the port of Tema.

The data thus compiled are not as accurate as daily logbook abstracts, but they seem to be a good enough substitution for them. Those data are published in Statistical Series-8.

5. SUMMARY DATA PROCESSING

The processing of summary data using ICCAT data bases and files can be classified into two categories: one "routine" processing and one "special" processing.

A. "Routine" processing of summary tables

The programs are all complete for such routine processing. Those include the following:

i) Statistical Bulletin

- Table 1. Total catch by species
- Table 2. Total catch by country
- Table 3. Species catch by gear
- Table 4. Species catch by area and gear
- Table 5. Country catch by gear, area and species

ii) Data Record

- Table 1. Catch and effort by species, gear, country, month (quarter) and 1°x 1°area (5°x 5°area).
- Table 2. Summarized catch and effort by species, gear, country, quarter and ICCAT sampling area.
- Table 3. Size frequencies by species, gear, country, ICCAT sampling area and month (or quarter).

Catalogues - All data inventory for ICCAT C/E and size frequency files.

iii) Species catch tables

These tables are prepared for the convenience of the SCRS species rapporteurs. They consist of catch by gear and by country and general area for each species.

iv) Tag recovery table

All the release and recovery data for tag recoveries reported in 1978 were processed for the tagging lottery.

B. "Special" processing of summary tables

From time to time the Secretariat receives requests from various ICCAT working groups and from national offices to compile summary tables of specific data. We apply the criteria agreed upon by the SCRS in 1977 regarding the responsibility for the processing costs. In 1979 many working groups met and therefore considerable processing work was done by the Secretariat at the Commission's expense. Special computer programs had to be written and debugged for each processing. However, it is now becoming easier to write a new program, since in many instances some of the programs now accumulated can be modified for a new situation.

Besides these, the Secretariat had to process some data in order to fulfill its assignments, such as the estimation of North-South catch of albacore by longliners, etc.

These special processings achieved by the Secretariat in 1979 are as follows:

i) For the Working Group on Juvenile Tropical Tunas

Table 1. Catch and effort data by 1°x 1° and by month, by gear and by country for all the fleets, with the exception of the FISM fleet, which operated in the Gulf of Guinea from 1969-78

Table 2. Summary of Table 1 by year, 5°x 5° area and by month.

Table 3. Size frequency data by 5°x 5° and by month, by gear and country for all the fleets (except the FISM fleet) in the Gulf of Guinea, 1969-78.

Table 4. Summary of Table 3 by gear, year, all areas and/or all years combined.

For the above mentioned works, the TASKI base and the CATEFF and FREQ files were used.

ii) For the Bluefin Workshop

Bluefin catch by country and gear since 1950.

iii) For Secretariat assignments

Table 1. Estimation of North-South breakdown of albacore catches.

Table 2. Estimation of East-West breakdown of yellowfin catches.

For these works, the TASKI data base and the catch and effort base and files were used.

6. ASSISTANCE OF DATA EXCHANGE BETWEEN LABORATORIES

One of the major functions of the Secretariat is to assist in the data exchange between laboratories and to help each lab maintain its data bases updated. Since the Secretariat now inputs all the data into its own files, it would be a waste of time for each laboratory to duplicate the data entry. Therefore, the Secretariat no longer circulates duplicated hard copies of data it received from the national offices. Instead, we try to enter data which we receive to the files at the earliest possible date and then send out a catalogue of the data to the national offices.

Any scientist who wishes to have a copy of the data entered into the data base can request one from the Secretariat. We then provide a magnetic tape copy or a hard copy of such data.

In 1979, the Secretariat indeed provided several laboratories with copies of various data.

Meanwhile, many scientists sent a copy of data to the other pertinent scientists at the same time as they sent data to the Secretariat. This procedure is very much appreciated as there is always a certain time lag between the time the data are received by the Secretariat and the time the catalogue is sent out.

The Secretariat has also received some duplicate copies of data files from various laboratories. In checking those data, we occasionally found errors in the files. In such cases, we drew the attention of the responsible scientists to this matter.

7. DATA DISSEMINATION

The outputs are disseminated in the following forms:

Statistical Bulletin	--	routine processing
Data Record	--	routine processing
Statistical Series	--	routine processing
Quick estimates	--	routine processing
Special catch tables	--	special processing
Special outputs for working groups	--	special processing

For details, see the Secretariat Report on Statistics and Coordination of Research (COM-SCRS/79/22).

8. FUTURE PLANS

Until the Working Group on Data Management finishes its evaluation of the amount of data input and processing to be done by the Secretariat, it is very difficult for us to do any further comparative studies (cost efficient studies) such as we presented at the 1978 meeting (SCRS/78/17).

In 1979, much more work was done than in 1978 and with almost the same funds as in 1978, despite the fact that the cost of the INFONET system was increased by 15%. This was possible because the Secretariat now has more experience and has the benefit of accumulated programs, and because of careful management and organization of the system.

For 1980, if only a minor increase in the work can be expected, the cost for executing all the work with the INFONET system will only be incremented by the inflational increase in the unit (SRU) price (15 or 20%). However, if a drastic increase in the amount of work is expected, if considerable new processing is required by the Skipjack Year Program, or if any further devaluation in the U.S. dollar occurs, the Secretariat is in favor of purchasing a mini-computer system to avoid the risk of running out of funds to complete our assignments.