Artfish 2009

Operations manual

An instrument for developing and implementing fisheries statistical monitoring programmes

Prepared by the Fishery Information, Data and Statistics Unit (FIES)

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS

CONTENTS

Introductory Note

ArtFish stands for "Approaches, Rules and Techniques for Fisheries Statistical Monitoring. It is a suite of statistical methods and computer procedures aiming at facilitating the development and implementation of fisheries statistical programmes. At present ArtFish contains two main components: (i) ArtBasic for processing and analysis of monthly primary data, and (ii) ArtSer for the integration of monthly estimates and the preparation of tabular outputs and graphics. These two components are described in this manual.

ArtFish first appeared in 1993 under MS-DOS and was re-written for Windows in 1997. This 2009 version contains a number of modifications that are transparent to users but were necessary to improve 'Setup/Installation' as well as application operation. Compatibility with the earlier version is fully maintained and users currently operating ArtFish will be able to switch to the 2009 version by means of a simple data transfer (see Installation topic below).

Installation and running

ArtFish 2009 is contained in a folder with name "ARTFISH_2009_RUNTIME" which can be downloaded from the FAO website or obtained on common computer media such as flash memory and CD ROM. Once the folder has been made available the following steps apply:

(a) Copy "ARTFISH_2009_RUNTIME" (after unzipping if required) anywhere on the C: drive, either as a single and unique application or under another folder. The latter option allows concurrent use of several ArtFish applications.

(b) Locate and run the SETUP.EXE program contained in sub-folder \ARTFISH_SETUP\ and follow the instructions provided by the installation procedure. Any warnings of the operating system that may appear can be ignored. In some PCs the installation might require the intervention of the System Administrator (SA). The SA must ensure that the two programs ArtBasic and ArtSer can also run by the user, else an error message (WRONG PATH NAME) will appear each time a user attempts to launch the programs.

Note: Users that have been running a previous version of ArtBasic should copy folders LANDINGS, EFFORT, TABLES and RESULTS from the old to the new location.

Note: Users that have been running a previous version of ArtSer should copy folders DATA and TABLES from the old to the new location.

(c) The two ArtFish executable modules are:

- **ARTFISH_ARTBASIC_2009.EXE in sub-folder \ARTBAS**
- **ARTFISH_ARTSER_2009.EXE in sub-folder \ARTS**

It is recommended that their shortcut version be placed on the desktop area.

Very Important Note !!!: Users must ensure that their computer is configured correctly to operate with the appropriate decimal operator (i.e. "," or "."). Once ArtBasic is installed, these setting can not change. A warning message will appear upon ArtBasic execution if the settings have been changed. This is done to prevent data corruption.

Chapter One

1. The ArtBasic component

This chapter covers the operations of ArtBasic, the ArtFish component for handling monthly primary data. This computer procedure can be invoked by running ARTFISH_ARTBASIC_2009.EXE in sub-folder …\ARTFISH_2009_RUNTIME\ARTBAS\.

A complete operational cycle of ArtBasic involves:

- **Selection of YEAR and MONTH (definition of time context).**
- **Setting-up structural data, such as geographical locations, stratification, fleet distribution, boat/gear classifications and species.**
- **Inputting of sample data on catch, effort, fish size and first-sale prices.**
- **Calculating monthly estimates.**
- **Producing reports on primary data and resulting monthly estimates.**

1.1 Selection of YEAR and MONTH

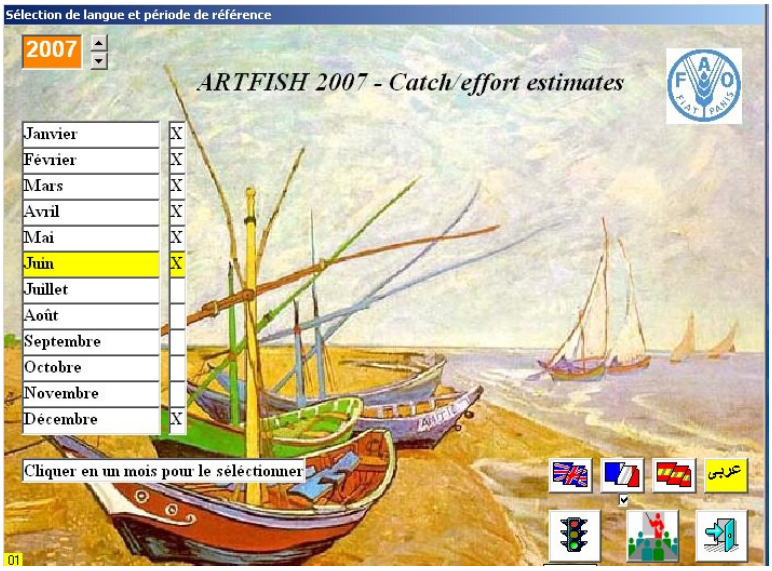


Figure 1. The ArtBasic start screen

The upper left YEAR box is used to set-up the year. Clicking then on a month will activate the green traffic light to allow use of ArtBasic main functions. The selected YEAR-MONTH time context will remain in force until the user quits ArtBasic by clicking on the "exit door" button.

1.2 Structuring ArtBasic

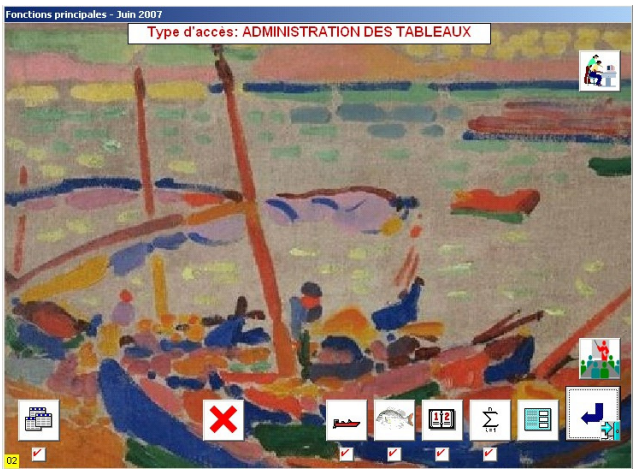


Figure 2. The ArtBasic screen of main functions

The ArtBasic main functions screen contains several function buttons, some of which are activated only if the system structural data (or tables) have been completed. Thus, the first action in a new ArtBasic session is to construct these tables. Once the tables have been set-up for a given time period, then they can be carried forward for all following months. The bottom-left function:

 Tables

is used for this purpose. The resulting screen will contain all sub-functions for constructing the nine ArtBasic tables.

Figure 3. The ArtBasic screen of tables

1.2.1 Structuring ArtBasic – Major Strata

Normally they refer to major administrative areas and are defined for reporting purposes. Clicking on this function will result in the creation of an empty table containing just one line. Blank lines (10 at a time) are added by clicking on the blue-cross button.

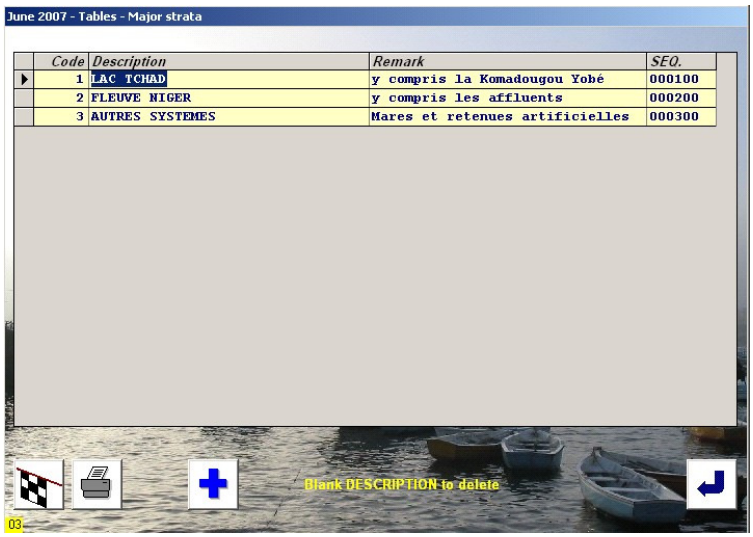


Figure 4. Example of a table of major strata

Major strata, minor strata, sites, boat/gear types and species, all use the same standard table format illustrated above. The four columns contain:

- **An automatically generated numerical code that is unique and not controlled by users;**
- **Description of major stratum in local language;**
- **Optional description in a standard language, or comments;**
- **Sorting sequence (text or numbers) according to how users want table entries to appear in reports.**

Once the table has been constructed, users may decide to:

Save table and return to the TABLES screen to continue on another table.

Print table and stay on same screen.

 **Return to the TABLES screen without saving.**

NOTE 1: To insert a new line between two existing lines, use the sorting sequence.
NOTE 2: To delete a line, blank the description.

1.2.2 Structuring ArtBasic – Minor Strata

 **These are normally logical sub-divisions within a major stratum and constitute the geographical context of an estimation process. Setting-up minor strata follows the same rules applying for major strata.**

1.2.3 Associating Minor Strata to Major Strata

 **Clicking on this function will invoke the following screen:**

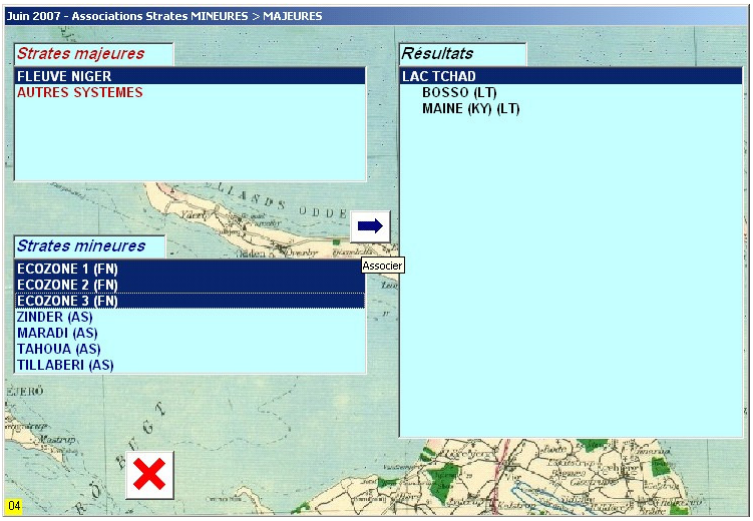


Figure 5. Associating minor to major strata

The upper left box contains major strata, each of which will be associated (=linked) to one or more minor strata (lower box). The association works through (i) selecting a major stratum in the upper box, (ii) selecting multiple minor strata in the lower box, and (iii) clicking on the arrow button. The process is repeated until there are no entries left in the left-hand boxes.

NOTE: Each time the tables of major or minor strata are revised, the associations are cancelled automatically and the linking process will have to be repeated.

1.2.4 Structuring ArtBasic – Sites

 **These are home ports or landing locations or both. Setting them up follows the same rules applying for major and minor strata.**

1.2.5 Associating Sites to Minor Strata

 **Clicking on this function will invoke the following screen:**

Figure 6. Associating sites to minor strata

The upper left box contains minor strata, each of which will be associated (=linked) to one or more sites (lower box). The association works through (i) selecting a minor stratum in the upper box, (ii) selecting multiple sites in the lower box, and (iii) clicking on the arrow button. The process is repeated until there are no entries left in the left-hand boxes.

NOTE: Each time the tables of sites or minor strata are revised, the associations are cancelled automatically and the linking process will have to be repeated.

1.2.6 Structuring ArtBasic – Boat/gear types

This table is constructed using the same rules applying to sites, minor strata, etc. To be noted that each entry must exactly describe a combination of boat category and gear type or fishing method.

1.2.7 Structuring ArtBasic – Frame Survey

Once the tables of sites and boat/gear categories have been set-up, the system automatically generates a table of all combinations of sites and boat/gear types and fills it with zeroes. Users will then specify the number of fishing units operating from each site and for each boat/gear category. Such data usually derive from frame surveys or are automatically generated from vessel registers.

Juin 2007 - Enquête cadre

Site & type bateau/engin		N.Unités
Blatoungour (BO)	Filet Maillant	151
Blatoungour (BO)	Epervier	106
Blatoungour (BO)	Palangre non appâté	148
Blatoungour (BO)	Palangre appâté	5
Blatoungour (BO)	Nasse	148
AUTRES (BO)	Filet Maillant	2872
AUTRES (BO)	Epervier	119
AUTRES (BO)	Palangre non appâté	112
AUTRES (BO)	Palangre appâté	0
AUTRES (BO)	Nasse	396
Tam (MA)	Filet Maillant	27
Tam (MA)	Epervier	13
Tam (MA)	Palangre non appâté	5
Tam (MA)	Palangre appâté	1
Tam (MA)	Nasse	6
Lada (MA)	Filet Maillant	20
Lada (MA)	Epervier	2
Lada (MA)	Palangre non appâté	1

Figure 7. Example of a frame survey

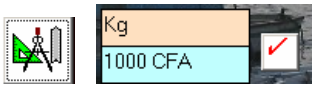
1.2.8 Structuring ArtBasic – Species

This table is constructed using the same rules applying to sites, minor strata, etc. It is recommended that species are described using both local and international standards. It is also a good practice to use the first six letters of the species name in the sorting sequence, so as to have all species listed alphabetically and facilitate data recording and inputting.

Code	Description	Remarque	SEQ.
1	Bontalba/	Clarotes sp	Bontal
2	Daria/Tchi Hakki	Distichodus sp	Daria/
3	Dessi Kirey/Rambochi	Heterobranchus sp	DessiO
4	Dessi bi/Bakin kihi	Clarias sp	DessiO
5	Dewa bi/Din ko	Bagrus docmac	Dewa b
6	Dewa Kouarey/Ragon Roua	Bagrus bayad	Dewa K
7	Dibarou/	Auchenoglanis sp	Dibaro
8	Dou/Bour dô	Labeo sp	Dou/OO
9	Fotoforo/Boukou/carfassa	Tilapia sp	Fotofo
10	Goney/	Gymnarchus niloticus	GoneyO
11	Guiguiri/	Synodontis sp	Guigui
12	Hani/Minjiria	Malapterurus electricus	Hani/M
13	Kalan Kassi/N'gari/Chémani	Alestes sp	KalanO
14	Kouala/Bali	Heterotis niloticus	Kouala
15	Modoria/	Chrysichtys sp	Modori
16	Salimbélé/Fâliya	Citharinus sp	Salimb
17	Tchéraou/Guiwan roua	Lates niloticus	Tchéra
18	Wassi/	Mormyrus sp	Wassi/
19	Yôlo/	Mormyrops sp	Yôlo/O

Figure 8. Example of a species table

1.2.9 Structuring ArtBasic – Measurement units



The last table relates to measurement units. Users indicate the units used for weights and currency and click the OK button.

1.2.10 Structuring ArtBasic – Carrying forward tables

Figure 9. Carrying forward ArtBasic tables

Once the ArtBasic have been set-up for a given period they can then be carried forward without the need to input them again. When a new YEAR-MONTH is selected, users are given the option to copy the appropriate tables from a historical YEAR-MONTH list.

1.3 ArtBasic primary data

Figure 10. ArtBasic main functions. Tables are marked as completed. The three functions for inputting effort, landings and active days are activated.

Once the ArtBasic tables have been completed (and only then) the ArtBasic main functions for inputting sample data are activated.

These inputting functions include:

Samples on boat activities

Samples on landings, prices and fish size

Time extrapolating factors for effort (active days)

There is no specific sequence in which these operations must be performed. However, the routine for automatic estimation remains inactive until all three tasks described above have been successfully completed.

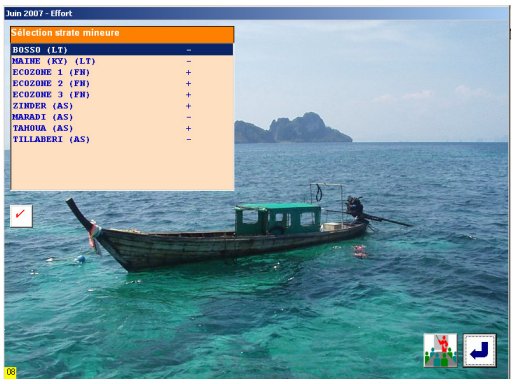
1.4 ArtBasic primary data – Boat activities

Boat activities are measured through the coefficient BAC (Boat Activity Coefficient) which expresses the probability that ANY fishing unit is active on ANY day during the month. To estimate BAC there are several data collection scenarios, the commonest of which are:

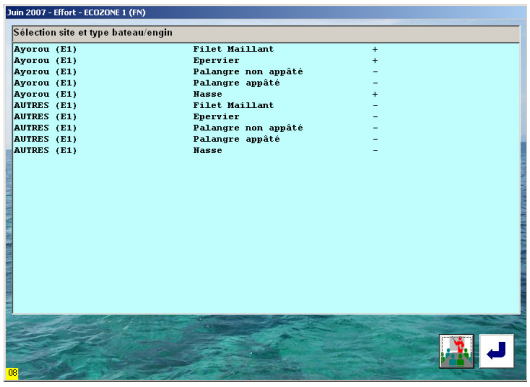
- **Visiting sites and counting ALL boats that were active/inactive (1 or 0) during the specific sampling day.**
- **Visiting sites with a list of, say 10, pre-selected boats (or fishermen) and finding out how many of these boats were active.**
- **Visiting sites at the end of the month and asking fishermen how many days they had been using their gear.**

All boat activity scenarios are accommodated into a single input screen. This screen is activated by taking the following steps:

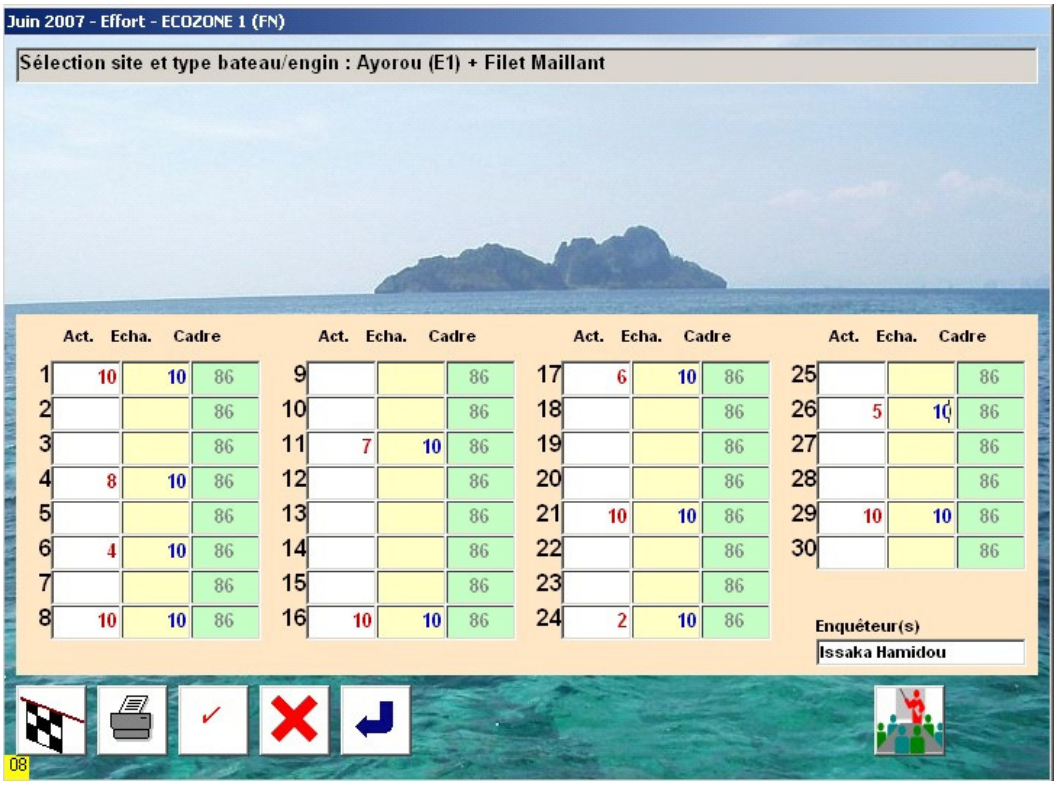
(a) DETERMINING A MINOR STRATUM



(b) SELECTING A SITE AND BOAT/GEAR CATEGORY



(c) INPUTTING THE NUMBERS OF ACTIVE BOATS



ERROR: undefined
OFFENDING COMMAND: f`~

STACK: