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FISAT

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FAO-ICLARM stock assessment tools

User's manual



Food and Agriculture Organization of the United Nations

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User's manual

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The FAO-ICLARM Stock Assessment Tools (FiSAT) presented herein is a program package consisting of robust methodologies for use with microcomputers, enabling users to formulate management options for fisheries, especially in data-sparse, tropical contexts. FiSAT did not evolve overnight. Indeed it took years of experience from many scientists throughout the world, with both LFSA and the Compleat ELEFAN, for a software to emerge that would go beyond these two packages. The functionality and flexibility, thus ease of use of both LFSA and the Compleat ELEFAN software, from which FiSAT was developed, provided the criteria which determined the final form taken by FiSAT.

This User's Guide was designed and written for use together with both the software, and the FiSAT reference manual - hence the absence of screen displays and graphs. Moreover, the chapters are arranged as presented in FiSAT. The following are summaries of the six chapters of this User's Guide:

Chapter 1. Getting Started

Contains information on system requirements, on installing the package, on how to respond to FiSAT prompts, and on how to access FiSAT functions and menu options;

Chapter 2. HELP Facilities

Potential users of this software, especially novice computer users, are advised to read this short chapter, which contains information on how to use the HELP facilities included in the system;

Chapter 3. FILE Menu

Contains information on the different routines available in the FILE menu which deals mainly with data creation, editing and other data manipulation routines;

Chapter 4. ASSESS Menu

The heart of FiSAT: contains a description of the different modules available to assess/analyze data; their requirements, and the expected outputs;

Chapter 5. SUPPORT Menu

Contains a description of the different modules available in FiSAT to prepare or complement data analyses as performed through the "ASSESS" menu;

Chapter 6. UTILITIES Menu

Contains information on various utilities, e.g., import and export facilities, the FiSAT calculator, printer configuration, etc.;

Appendices

A. Editing and Function Keys

Contains tables summarizing the keys and their function in the software;

B. Terms and Variables

Contains a list of terms and variables used in this manual and their definition(s);

C. Error Messages

Contains a list of error messages used by the software and suggested solution(s);

D. References

Lists all references cited in this User's Guide.

We emphasize that users of FiSAT must read the manual presenting the background of the methods included therein (Gayanilo and Pauly in press), manuals such as Pauly 1984 and Sparre and Venema 1993, and the suggested reading(s) specified as a model/method is presented, and do their best to understand the spirit of these methods if they want to use FiSAT optimally to extract reliable information from their data.

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ABSTRACT

FISAT (FAO-ICLARM Stock Assessment Tools) is the software that resulted following the merging of its two predecessors, the Compleat ELEFAN (Electronic Length Frequency ANalysis) package developed at ICLARM (International Center for Living Aquatic Resources Management) and LFSA (Length-based Fish Stock Assessment) developed by FAO, and the addition of some new routines found useful in the analysis of length frequencies.

FISAT was developed for an IBM PC (or compatible) with a minimum of 512K of RAM and 7.5 MBytes of free disk space, and takes advantage of the high resolution-graphic capabilities of microcomputers. Other key features of the software are (i) a spreadsheet-like "feel", with the file being processed at most one click of a button away; (ii) pop-up windows, with concise help messages describing available functions, and (iii) support of various graphic cards and of standard dot matrix and HP PCL supported laser printers.

FISAT was developed mainly for the detailed analysis of length-frequency data, but also enables related analyses, of size-at-age, catch-at-age, selection and other data typically collected for tropical fish stock assessment.

FISAT has four main groups of routines, FILE, ASSESS, SUPPORT and UTILITIES. FILE deals with the file creation, editing and various data manipulation routines. ASSESS contains the models and methodologies used in the analysis of the different types of data which FISAT supports, and ranges from growth and mortality parameter estimation to prediction using either the Beverton and Holt yield-per-recruit analysis or the Thompson and Bell yield and stock prediction model. SUPPORT was developed to facilitate data analysis. It contains routines to simulate length frequencies, display bar graphs, estimate (unsampled) maximum lengths, and sample weights, and perform regression analyses. UTILITIES contains functions for importing and exporting data files, configuring output options and managing some DOS functions; a simple calculator is also included. A separate manual is available from FAO, and by the same authors, which documents the routines in ASSESS and SUPPORT.

Contents

Preparation and use of this document	iii
Acknowledgements	v
Abstract	vi
Contents	vii

Chapter 1. Getting Started

What you will learn from this chapter	1
About the package.....	1
System requirements.....	1
Installing the package	2
Starting FiSAT	3
Responding to prompts	4
The menu bar	5
System flow diagram	5

Chapter 2. HELP Facilities

What you will learn from this chapter	9
Types of HELP messages	9
Accessing HELP	10

Chapter 3. FILE Menu

What you will learn from this chapter	11
The "About..." message.....	12
File headers	12
Types of files.....	16
Time series of length frequencies	16
Data grouped by constant class size	16
Data grouped by variable class sizes	17
Ungrouped lengths.....	18
Time series of weight frequencies	19
Growth increments.....	20
Length-at-age	21
Catch in numbers by age.....	22
Series of mean lengths and standard deviations	23
Probabilities of capture	24
Table of values.....	25
Two-column regression files	25
Creating a file.....	26
Saving a file	27
Loading/editing a file.....	29
Printing a file.....	29
Sample manipulation	30

Merging two or more files	31
Correcting using probabilities of capture.....	31
Adjusting class intervals.....	33
Smoothing data files	34
Pooling samples	35
Converting files	35
Length to length.....	35
Weight to length.....	36
Raising samples	36
Using catch per unit of effort.....	37
Using catch/sample weight.....	37
Using a constant	38
Percent of sample total	38
Square root of sample total.....	39
Temporal weighting.....	39
Exiting from FiSAT	40

Chapter 4. ASSESS Menu

What you will learn from this chapter	41
The format in module description.....	42
Parameter estimation.....	43
Direct fit of length-frequency data.....	43
ELEFAN I	43
Shepherd's method.....	46
Powell-Wetherall plot.....	48
Analysis of length-at-age data	49
Modal progression analysis	50
Bhattacharya's method.....	51
NORMSEP	53
Linking of means.....	54
Linking of means: C.V. of L_m	54
Analysis of growth increment data	56
Gulland and Holt plot	56
Munro's method.....	58
Fabens' method.....	59
Appeldoorn's method.....	60
Mortality estimation.....	61
Z from steady-state sample.....	61
Length-converted catch curves.....	61
Jones/van Zalinge plot.....	64
Z from mean length	65
Beverton and Holt model	65
Ault and Ehrhardt method.....	65
Hoenig's models	66
Natural mortality	67
Rikhter and Efanov's method	68
Pauly's M equation	68
M from selection data.....	69
Recruitment patterns	71

Probabilities of capture.....	72
Trawl-type selection	72
Gillnet selection.....	74
Virtual population analysis.....	76
Age-structured VPA	76
Length-structured VPA.....	77
VPA with pseudocohorts.....	78
Predictions	80
Relative Y/R and B/R analysis	80
Thompson and Bell yield and stock prediction	83

Chapter 5. SUPPORT Menu

What you will learn from this chapter	88
Simulation of length-frequency samples	88
Sample weight estimation.....	94
Sample bar graphs.....	95
Maximum length estimation	95
Growth performance indices.....	97
Regression analysis.....	98

Chapter 6. UTILITIES Menu

What you will learn from this chapter	100
Copying FiSAT files	100
Show file status.....	101
Deleting FiSAT files.....	101
Importing files.....	101
ELEFAN files	102
LFSA files	102
LOTUS 1-2-3 WK1 files	102
ASCII files	104
NAN-SIS length frequencies.....	105
Exporting files.....	106
LOTUS 1-2-3 WK1 file.....	106
ASCII file	106
Configuring printer device	106
Calculator	107

Appendices

A. Editing and function keys	109
B. Terms and variables	112
C. Error messages	120
D. References	122

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