
# INTRODUCTION TO MENU-DRIVEN FISH STOCK ASSESSMENT AND MANAGEMENT DECISION (KOBE I+II) SOFTWARE

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**Dear Colleagues,**

Thanks for your interests on our menu-driven and user-friendly fish stock assessment and management decision (Kobe I+II) software. This document describes the basic information of the software.

## OBJECTIVES

The major objective to develop the menu-driven software is for users (*) unfamiliar with programming to implement “CPUE standardization”, “various types of fish stock assessment models” and “management decision tools (Kobe I: Kobe plot and Kobe II: Strategy matrix)”, which can be manipulated easily in a short time because no programming is required.

*(*) Non stock assessment experts (Scientists, Biologists, Students, Technicians, Managers, Industries and Others), especially in the developing countries.*

## POLICY

We actually do not recommend to use our menu-driven software. This is because the most appropriate way to run the above-mentioned applications is for users to develop their own programs using computer languages such as "R" or using the specific languages assigned for each application such as ASPIC , SAS, SS(**) etc. In this way, users can learn how each application works, what Input/Output means, and can make their own desired output and change it freely.

*(**) ASPIC: A Stock-Production model Incorporating Covariates, SAS statistical software (previously Statistical Analysis System) and SS: Stock Synthesis.*

However, we know from years of experience with Capacity Buildings that most users who apply our software find it difficult to do so. Therefore, users can utilize our software until they can run application by their own programs. In this regard, we request that our software users fully understand the mechanism of each application and the implications of Input/Output. To fulfil this requirement, we have thoroughly explained these points to our users in past Capacity Buildings, so that they do not fall prey to the auto-operating syndrome.

## UTILIZATION AND TRAININGS

All software are free of charge for anyone to utilize. All software are @ copy-right reserved by the *Stock assessment software developing team.* Thus if you want to use the software, please contact us. We will provide on-site free training to make sure that users fully understand the mechanism of each application and the implications of Input/Output. After the on-site training is completed, we will provide software and manuals. This is because we are responsible to make sure that users understand mechanism of each application and the implications of Input/Output and they can use the software properly.

**MENU-DRIVEN SOFTWARE SERIES**

| Types | | Level | Name | Icon to start | Input information | | | | Features | Current version year (start year) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Catch | CPUE | Biology (*) | (see below) | | |
| **CPUE standardization** | | *Basic to Intermediate* | (1) GLM based CPUE Standardization | CPUE standardization | | | | | Basic CPUE Standardization | V3 2023 (2016) |
| **Stock assessment (SA)** | **Production model (PM)** | | (2) ASPIC (A Stock-Production model Incorporating Covariates) | ASPIC batch job | | | | | Standard PM incorporating observation (OBS) errors | V3 2023 (2016) |
| | | *Advanced* | (3) JABBA (Just Another Bayesian Biomass Assessment) | | | | | | Theoretically best PM incorporating both OBS and process errors | *(to be Developed)* |
| | **Age structured (integrated) model** | | (4) ASPM (Age Structured Production Model) | BatchASPM *(for both ASPM and SCAA)* | | | | | In-between PM & age-structured model (selectivity: fixed) | V4 2018 (2010) |
| | | | (5) SCAA (Statistical-Catch-At-Age) | | | | | | Catch-At-Age based age-structured model | V4 2022 (2017) |
| | | | (6) SCAS (Statistical-Catch-At-Size) | SCAS | | | | | Catch-At-Size based age-structured model | *(under development)* |
| **Management decision tools** | | *Basic to Intermediate* | (7) Kobe I : Kobe plot and Kobe II: Strategy matrix (risk assessment) | Kobe plot I_II | | | | Kobe I: SA results (F/Fmsy & B/msy)<br><br>Kobe II : Pr. violating MSY (F and Biomass) (from Risk assessment) | Kobe I : Standard stock status trajectory plot<br>Kobe II: Evaluation of the optimum catch level (TAC) | V5 2023 (2011) |
| | | *Intermediate* | (8) Kobe II for (2) ASPIC | Kobe II Risk matrix (for ASPIC) (ver.2... | | | | Results of Kobe II (strategy matrix based on risk assessment) in (2) ASPIC | Kobe II: Special version suitable for (2) ASPIC | V6 2023 (2017) |

*(*) Size, Length-Weight relation, Selectivity, M (natural mortality), Growth, Maturity-At-Age, Spawner-Recruit relation, Life span (Max. age), Fecundity, and others depending on the model.*

**USERS: 104 USERS (24 COUNTRIES)** (*alphabetical order*)

*(Fisheries Research Institutes, Universities, Fisheries Management Agencies and other relevant Agencies)*

Algeria, Argentina, Brunei Darussalam*, Cambodia*, China, Indonesia*, India, Iran, Japan*, Korea, Kenya, Malaysia*, Mexico, Myanmar*, Oman, Peru, Philippines*, Spain, Thailand*, Trinidad and Tobago, USA, Viet Nam*, Taiwan and Turkey.

*Note (*) Southeast Asian Fisheries Development Center (SEAFDEC) member countries*