

New FMSP stock assessment and management guidebooks available for free download

With the current trend towards the use of participatory approaches and co-management, it can sometimes appear that 'fish stock assessment' has gone out of fashion, at least for small-scale fisheries. These days, fishery management is more often driven by a set of goals and objectives agreed with the users, than by the outputs of some technical fisheries model or software package. Although good planning and better collaboration among stakeholders is clearly the right way forward, we must not forget the limitations imposed by the biology of the natural resource. Since the agreed goals should always recognise the need for 'sustainability' in some form, some method must be used to determine what level and type of fishing is compatible with the natural productivity of the fish stock. Stock assessment is still needed as a central element in fishery management to guide management options, prevent

stock collapses and ensure that the stakeholders' goals are achieved.

With most of the world's fisheries now fully or over-exploited, and with millions of people relying on fisheries for their livelihoods, there is an urgent need for management practices that ensure that fish stocks are sustained, along with the benefits they provide.

Over the last decade, the DFID-funded Fisheries Management Science Programme (FMSP) has developed a number of stock assessment tools that can help to ensure the sustainability of fisheries. As listed in the box below, these include four different software packages and a series of guidelines for specific management options or approaches. The tools are appropriate for a range of differing situations, including data-limited and small-scale fisheries. The software packages are available to download, free of charge,

from the FMSP website (www.fmsp.org.uk). Week-long training courses for the FMSP tools have been held in East Africa (Kenya) and Southeast Asia (Vietnam) in 2003, India in 2004 and Bangladesh in 2005.

The overall aim of the FMSP is to promote improved fisheries management for the benefit of poor stakeholders. Towards this end, two recent FMSP projects have produced guidebooks showing how the FMSP stock assessment tools may be used to manage fisheries according to the principles and concepts of the FAO Code of Conduct for Responsible Fisheries and the UN Fish Stocks Agreement. Among other things, these international agreements promote the use of reference points and indicators for measuring the achievement of fishery goals, and the provision of precautionary advice that recognises uncertainties and risks.

What are the FMSP stock assessment tools?

Software: (including help files and tutorials. Please visit www.fmsp.org.uk)

- **CEDA** - Catch Effort Data Analysis: uses non-equilibrium methods to provide estimates of stock sizes, MSY reference points, catchability and other parameters.
- **LFDA** – Length Frequency Distribution Analysis: estimates growth parameters and total mortality.
- **Yield** software: estimates yield and biomass-based indicators and reference points, allowing for uncertainty in parameter inputs.
- **ParFish** – Participatory Fisheries Stock Assessment: fits production model to standard fisheries and/or other data, using a Bayesian approach to integrate uncertainties.

Guidelines: (see FAO Fisheries Technical Paper 487 for further details)

- Costs and benefits of age and length based assessment methods.
- Multi-species fisheries management.
- Bayesian stock assessment approaches for fisheries with limited data.
- Estimating yield and stock status using life history parameters.
- Empirical stock assessment approaches.



Fisheries Technical Paper 487 Stock Assessment for Fishery Management.

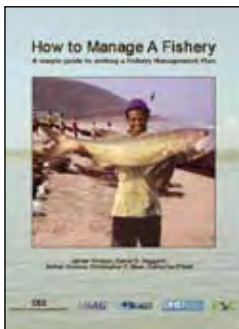
In 2004, FMSP Project R8360 developed a detailed, 260-page technical guide about the different FMSP tools. This is now being published by FAO as Fisheries Technical Paper 487 Stock Assessment for Fishery Management. It may be downloaded as a .PDF file from the R8360 page of the 'Projects Database' on the FMSP website and will also be available on the FAO website shortly.

In 2005, FMSP Project R8468 further developed a shorter two-part set that attempts to explain in simpler terms how and where stock assessment fits into the management process, and how managers and scientists can choose between the different tools that are available to them. These guides emphasise the complementary roles of fisheries managers and scientists in the responsible management of fishery resources. Although the subject is technical, the guides have been designed to be easy to read and understand. The contents of the two guidebooks are outlined below.



How to Manage a Fishery – A Simple Guide to Writing a Fishery Management Plan

This guide is aimed at fishery managers and goes step by step through a process of developing a fishery management plan. This includes setting the goals and objectives for your fishery, designing management measures to achieve those goals, monitoring the fishery to provide necessary feedback and ensuring success. The need for good scientific information to guide management decisions is emphasised, as is the use of reference points and indicators to measure the state of the fishery against each objective of the plan. Examples are given of different summary management plans for a range of different biological, social and economic objectives, showing how the tradeoffs between competing objectives can be reconciled.



A Guide to Fisheries Stock Assessment using the FMSP Tools

This guide is aimed principally at fishery scientists. It shows where and how stock assessment information is needed by managers, and how the necessary advice should be provided. It illustrates the use of the different FMSP tools, both in long-term 'strategic' stock assessments and for providing short term 'tactical' advice. The latest FMSP stock assessment tools have significant advantages over some alternative products, particularly in the provision of advice that recognises uncertainty and enables precautionary approaches to management, as required by the FAO Code of Conduct.

These two new guides may also be downloaded, free of charge, as PDF files from the Project R8468 page of the FMSP 'Projects Database' at www.fmsp.org.uk. Arrangements are also being made by the Indian publishers, CEE, to market hard copies in due course. A complementary set of Microsoft PowerPoint presentations is also available on the FMSP site. These may be used either as quick introductions to the new guidebooks, or for running full stock assessment training workshops using the FMSP software. Users are welcome to adapt the presentations to their own needs, provided the FMSP origin is acknowledged.

The R8468 guides were written by a team from MRAG Ltd, Scales Consulting Ltd, the Field Studies Council (UK) and the Centre for Environmental Education (India), in collaboration with partners in West Bengal, Orissa and Andhra Pradesh (India), and the Caribbean.

For more information on FMSP projects, please visit the program website at www.fmsp.org.uk. The FMSP is funded by the UK Department for International Development and managed by Marine Resources Assessment Group Ltd. This document is an output of the FMSP and the views expressed in it do not necessarily represent those of DFID.