# Fisheries Management decisions with limited resources and data

The mud crab (*Scylla serrata*) fishery in the Coringa mangroves near Kakinada, Andra Pradesh supports some 5000 fishers and forms an important contribution to the livelihoods of inhabitants of nine villages bordering the mangrove belt. The crabs provide a valuable export-orientated fishery; larger individuals exported to Japan, Malaysia and Singapore, smaller crabs sold on the domestic market. In recent years there has been a gradual reduction in crab landings. But with no history of fishery monitoring or stock assessment, devising effective management plans for the resource has been precluded…until now.

FMPS research has tested and developed a new approach to stock assessment, through case studies in Tanzania and the Turks and Caicos (R7497, R8397), that addresses many of the problems associated with these small-scale fisheries; primarily limitations in availability of resources to collect and analyse data for management such as stock assessments.

Participatory Fish Stock Assessment (ParFish) Software, Guidelines and Toolkit provide a framework for fishery assessment that can be undertaken with the involvement of fishers and in situations where availability of data is limited. It is based on conventional models, but does not require long time series of data, using instead Bayesian Statistics to incorporate fishers' knowledge on the resource, collected through structured interviews.

It was tested in Andra Pradesh, and a follow-up workshop to disseminate the results was held in Kakinada, bringing together fishers (including representatives from all of the nine villages involved in the fishery), government fisheries managers, scientists, politicians and NGOs. Discussions brought broad management issues to the surface, such as an NGO mangrove rehabilitation project that may have negatively affected the crab nursery grounds. Recognition of these issues is the first step towards their resolution. All stakeholders supported co-management in principle for the fishery, and are keen to gather more data to improve and update the assessment.

- ParFish was developed and initially tested in the Turks and Caicos Conch fishery, and in the Zanzibar mixed reef fish fishery by MRAG during two previous projects between 2001 and 2005.
- The approach brings together fishers, managers and other stakeholders helping them enter a cycle of learning, management planning and implementation, which can support co-management.
- In 2005/06 Project R8468 tested the transferability of the model to India.
- The research has been funded by DFID through their Fisheries Management Science Programme (see www.fmsp.org.uk, projects R7947, R8397 and R8468).