

International Workshop on the Sustainable Use and Management of Sea Cucumber Fisheries, Puerto Ayora, Galapagos Islands, Ecuador, 19–23 November 2007

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Background

Sea cucumbers fulfil an important role in marine ecosystems and are a significant source of income to coastal communities, therefore, their conservation and management are of paramount importance. The current worldwide population status of sea cucumbers has prompted international meetings² aimed at providing scientific information and tools to help in their conservation and sustainable exploitation. These workshops and other recent articles highlight the fact that, while great advances have been made in sea cucumber research, there are still some critical gaps in information available to fishery managers. Two areas of particular concern are taxonomy and management strategies.

The taxonomy of several groups of holothurians remains unclear, and some species have been redefined in the past decade. Commercial sea cucumber species globally comprise almost 50 species. The multi-species nature of sea cucumber fisheries affords them some demographic resilience, but often poses a difficult task for fisheries managers and customs officers in identifying sea cucumbers for export or estimating wild populations. The management of these resources will surely suffer in the absence of better support tools for identifying commercial species in their live and processed forms.

In tandem with taxonomic tools, resources managers also need to have prescriptive recommendations on what management regulations and activities are best for sea cucumber fisheries. Few guidebooks on managing sea cucumber fisheries are available, leaving the fishery manager with a subjective task of drawing on management principles based on other resources. In addition, sea cucumber fisheries differ greatly in their cultural setting, socioeconomic structure, methods and scale in which animals are exploited, and in the technical capacity of management bodies. Sea cucumber fishery managers are also more sensitised to the need to conserve species diversity and the role that CITES listing can play in that goal.

With these information needs in mind, the Food and Agricultural Organization of the United Nations (FAO) is implementing a global project on sea cucumbers. A central aim is to collate and disseminate information on the global status of commercially exploited sea cucumber stocks and to provide support tools to improve the conservation and sustainable exploitation of these benthic marine organisms. One major goal of the project is to develop technical guidelines to assist fisheries managers in deciding on regulations and processes for the better management, conservation, and sustainable exploitation of their sea cucumber fisheries. Further outputs will be a global identification guide on commercial species that should be user-friendly to fishery managers and customs officers, and a more complete record of genetic “barcodes” for commercial holothurian species.

The project has also commissioned five regional reviews on the current status of sea cucumber populations in Asia; Australia and Pacific Island nations; North America; Mexico, Central and South America; and Africa and Indian Ocean. In each region, one locality of topical interest was chosen as a “hotspot”, which was reviewed in greater detail. These regional reviews and hotspot analyses will provide case examples and a base for understanding the variation in context of sea cucumber fisheries. Drawing from the lessons learned in the above studies, the Technical Guidelines will consolidate the current knowledge and best practices for the sustainable use and management of sea cucumber fisheries.

Regional reviews and hotspots documents presented by the authors in the recent workshop held in the Galapagos (Ecuador) are listed below and will be available as an FAO document sometime during the first quarter of 2008.

- Regional review on the population status, fisheries and trade of commercially important sea cucumbers in Asia, by Poh Sze Choo.
- Hotspot: Philippines, by Poh Sze Choo.

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2. For example, the FAO technical workshop “Advances in sea cucumber aquaculture and management” and the CITES technical workshop “Conservation of sea cucumbers in the families Holothuridae and Stichopodidae”.

- Regional review of temperate sea cucumber fisheries in the Northern Hemisphere, by Jean-François Hamel and Annie Mercier.
- Hotspot: Precautionary management of *Cucumaria frondosa* in Newfoundland and Labrador, by Jean-François Hamel and Annie Mercier.
- Regional review on the population status, fisheries and trade of commercially important sea cucumbers in the Western Pacific region, by Jeff Kinch, Steve Purcell, Sven Uthicke and Kim Friedman.
- Hotspot: Papua New Guinea, by Jeff Kinch, Steve Purcell, Sven Uthicke and Kim Friedman.
- Regional review on the population status, fisheries and trade of commercially important sea cucumbers in Central and South America, by Veronica Toral-Granda.
- Hotspot: Galapagos, by Veronica Toral-Granda.
- Regional review on the population status, fisheries and trade of commercially important sea cucumbers in Africa and Indian Ocean Region, by Chantal Conand.
- Hotspot: Seychelles, by Riaz Aumeeruddy.

The workshop brought together sea cucumber experts in the fields of ecology, fisheries biology, socioeconomics and resource management (see photo). Their job was to review, discuss and agree upon generic and situation-specific management principles for sea cucumber fisheries. A major output from the workshop was to canvass the outline for the technical guidelines for the “Sustainable use and management of sea cucumber fisheries”.

Technical guidelines

Developing countries require better decision support for developing fisheries management plans. They also need scientifically based, but easy to understand, information on basic parameters that could enhance the productivity of fisheries and the income they generate.

Workshop participants (from left to right):

3rd row: Sven Uthicke, Kim Friedman, Jeff Kinch, Matthias Wolf, Annie Mercier, Steve Purcell, Marcelo Vasconcellos

2nd row: Ruth Gamboa, Poh Sze Choo, María Dinorah Herrero-Pérezrul, Chantal Conand, Priscilla Martínez

1st row: Jean-François Hamel, Alessandro Lovatelli, Verónica Toral-Granda, Akamine Jun, Eduardo Espinoza

Insert: Alex Hearn

Recognizing a pervasive trend of overfishing, and mounting examples of local extinctions, guidelines for conserving biodiversity of sea cucumber populations should be a prominent feature of conservation and management. Recommendations for improving the species conservation status must, in concert, take into account the socioeconomic impacts of sea cucumber fisheries and their importance to rural coastal livelihoods.

The technical guidelines will strive to achieve a sensible balance between management regulations that maximize long-term benefits to fishers, and those that ensure the conservation of stock biodiversity. The guidelines aim to present a decision support model tailored for sea cucumber fisheries that will lead managers through a logical framework for deciding on the most appropriate management rules and activities, given the characteristics of their fishery. They will distinguish between generic and situation-specific management best practices and tools that could guide fishery managers in the development and implementation of local or national management plans for sea cucumber fisheries. Such advice has been broadly agreed on by expert biologists, sociologists and resource managers at the workshop, and will be supported in the technical guidelines by scientific findings and case examples.

Another aim of the technical guidelines is to identify key areas in which regulatory bodies can improve their scientific, patrolling and enforcing capacities. The guidelines should propose clear recommendations for customs agencies on trade regulations, and the collection and sharing of export data. They should also give guidance to how CITES listing can aid the management and conservation of threatened or depleted holothurian species.

The guidelines should ultimately assist countries in developing and implementing management plans that aim to maintain or restore the productive capacity of the stocks while addressing their role in the livelihoods of coastal communities.

