Advances in sea cucumber aquaculture and management

The utilization of sea cucumbers, including for human consumption, has been steadily growing over the years. Up-to-date information on the present status of world sea cucumber resources and utilization is presented with special focus on countries such as China, Ecuador, Indonesia, Japan, Malaysia and the Philippines that have been heavily engaged in the industry for decades. Information from other countries such as Cuba, Egypt, Madagascar and the United Republic of Tanzania, relative newcomers to the sector, is also provided, indicating to some extent the growing interest with regard to the exploitation of holothurians for the demanding Asian markets. Details on the technical advances made in the artificial reproduction and farming of selected commercial species are presented. This document includes the recommendations formulated during the FAO Fisheries Department Workshop on Advances in Sea Cucumber Aquaculture and Management held in Dalian, China, in October 2003, along with the technical papers presented. The report will be useful to those international and regional development organizations and national governments who wish to prioritize their activities concerning sea cucumber conservation and exploitation.

Advances in sea cucumber aquaculture and management.
http://www.fao.org/docrep/007/y5501e/y5501e00.htm

Sea cucumbers
A global review of fisheries and trade

This paper reviews the worldwide population status, fishery and trade of sea cucumbers through the collection and analysis of the available information from five regions, covering known sea cucumber fishing grounds: temperate areas of the Northern Hemisphere; Latin America and the Caribbean; Africa and the Indian Ocean; Asia; and the Western Central Pacific. In each region a case study of a “hotspot” country or fishery is presented to highlight critical problems and opportunities for the sustainable management of sea cucumber fisheries. The hotspots are Papua New Guinea, the Philippines, Seychelles, the Galapagos Islands and the fishery for Cucumaria frondosa of Newfoundland in Canada. Together they provide a comprehensive and up-to-date evaluation of the global status of sea cucumber populations, fisheries, trade and management, constituting an important information source for researchers, managers, policy-makers and regional/international organizations interested in sea cucumber conservation and exploitation.

Sea cucumbers. A global review of fisheries and trade.
http://www.fao.org/docrep/011/i0375e/i0375e00.htm
### Managing sea cucumber fisheries with an ecosystem approach

Sea cucumbers are important resources for coastal livelihoods in more than 40 countries. Sadly, widespread overexploitation of wild stocks risks biodiversity loss and the long-term viability of fisheries. Spawned from an FAO international workshop of experts, this document presents a “roadmap” to guide fishery managers in choosing appropriate regulatory measures and management actions for sea cucumber fisheries. It elaborates on their use, limitations and modes of implementation, with Examples and lessons learned from various fisheries. Achieving sustainable management of sea cucumber fisheries requires an ecosystem approach to fisheries (EAF), precautionary regulations, improved enforcement and stronger commitment of fishery managers and policy makers.

**Purcell, S.W.**  
Managing sea cucumber fisheries with an ecosystem approach.  
Edited/compiled by Lovatelli, A.; M. Vasconcellos and Y. Yimin.  

**Languages:**  
English - [http://www.fao.org/docrep/012/i1384e/i1384e00.htm](http://www.fao.org/docrep/012/i1384e/i1384e00.htm)  
Spanish - Online shortly (Early 2011)

### Putting into practice an ecosystem approach to managing sea cucumber fisheries

Pandemic overfishing to critical levels currently threatens the persistence of sea cucumber fisheries and the important role they play in the livelihoods of coastal fishers. Resource managers must embrace an ecosystem approach to fisheries, in which biodiversity conservation, ecosystem services and the concerns of stakeholders are taken into account together with the economic gains from fishing. This document is an abridged version of FAO Fisheries and Aquaculture Technical Paper No. 520 Managing Sea Cucumber Fisheries With An Ecosystem Approach. This document provides a “road map” for developing and implementing better management of sea cucumber fisheries. Also summarized here are the merits and limitations of potential management regulations and actions by the resource manager, and steps required for their implementation.

**FAO.**  

**Language:** English  

**English - Online shortly (Early 2011)**

### Commercially important sea cucumbers of the world

This guide book provides information on commercial sea cucumbers based on the work done by experts participating in the FAO Technical Workshop on "Sustainable Use and Management of Sea Cucumber Fisheries" held in Puerto Ayora, Galápagos Islands, Ecuador, from 19 to 23 November 2007. The vast majority belong to the order Aspidochirotida. The guidebook provides information on species biology, includes photographs of the live and processed animal, as well as illustrations of the body wall ossicles present in both live and processed individuals, that may help in the identification of sea cucumbers in trade. It also summarizes available fisheries information aiming to help decision makers, managers and scientists to learn from available information and undertake conservation measures.

**FAO.**  

**Languages:**  
English - In preparation (Available early 2011)