

SOCIO-ECONOMIC AND BIOLOGICAL ASPECTS OF RESTORING FISHERIES PRODUCTION OF MANGROVE COCKLES (*ANADARA* SPP.) IN COSTA RICA By Maarten Kuijper¹ and Oscar Pacheco Urpi²: ¹ IOC/WESTPAC, c/o National Research Council of Thailand (NRCT), 196 Phaholyothin Road, Chatujak 10900, Bangkok, THAILAND, ²Proyecto Desarrollo Rural Integral Peninsular, Apartado Postal 315, Puntarenas, COSTA RICA :—Mangrove cockles (*Anadara* spp.) constitute an important shellfish resource in Southeast Asia. It is less known, however, that some *Anadara* species are also caught on a commercial basis in estuarine areas on the Pacific coast of the tropical Americas. Although the quantities harvested are smaller, they do represent the main source of income for a significant number of marginalised fishermen and women. Lacking the financial resources for buying fishing gear, these people dedicate themselves predominantly to the harvesting of these bivalve molluscs. In Costa Rica, exploitation levels of mangrove cockles have in most places reached a stage where there are clear signs of over-fishing. The rehabilitation of coastal ecosystems is often perceived as restoring the physical appearance of an altered ecosystem with production considered to be a benefit in the long term. Restoring production, however, is a first priority for those local communities who depend on a particular ecosystem economically. In the framework of an integrated rural development project with a coastal zone management component, an attempt was made to improve the livelihood of the marginalised fisher-folk, while at the same time to develop strategies to ensure the recovery and sustainable production of the mangrove cockles. A one-year ban on mangrove cockle gathering was established during which participatory research was carried out on aspects of the population dynamics of the cockles. Although the ban was successful in terms of compliance on the part of the local community, natural recovery turned out to be insufficient to sustain previous fisheries exploitation levels once the ban was lifted. Community management was introduced as a strategy for sustainable production after the ban with varying success. Obstacles had to be overcome at all levels of government because co-management was a new concept in fisheries management for Costa Rica. Most problems arose, however, at the grass-roots level. Some of the implications of the introduction of co-management in Costa Rica are discussed. One of the outcomes of the study was the recognition of the need for an integrated coastal management approach covering the whole estuary. Steps are currently undertaken towards this goal.