Praveena Chaono 2011: Sustainability of Mud Crab Capture and Fishery Community's Role in Fishery Management in Kapoe Bay, Ranong Province. Master of Science (Fishery Management), Major Field: Fishery Management, Department of Fishery Management. Thesis Advisor: Associate Professor Sangtien Ajjimangkul, M.S. 205 pages.

The objectives of the study in sustainability of mud crab fishery and the community's role in fishery resource management in Kapoe Bay, Ranong Province were to study the utilization pattern of mud crab in order to analyze mud crab product utilized by fishers, to study the environmental condition of mud crab habitat, and to study community's role in fishery resource management. Three mangrove areas were selected for study sites; the outer part of Tambon Muangkluang, the inner part of Tambon Muangkluang-Kapoe-Banghin, and Tambon Naka. Water and sediment samples were collected from 15 stations and the mud crab products from fishery were collected from April 2010 to August 2010. Seventy five fishers from population - proportion calculation were interviewed. The sustainability of mud crab fishery result showed that fishers had average catch 7.2±3.4 kg/day. The outer part of Muangkluang had an average yield of 1.8±1.1 crab/rai/day, the inner part of Muangkluang 1.4±0.4 crab/rai/day, and Naka 0.6±0.4 crab/rai/day. Crab fishery in Kopoe Bay could yield for 335,736 kg/year which was revenue for 20.89 million baht/year. The research on environment sustainability showed that water quality of the study areas was suitable for aquaculture, except some areas in Tambon Naka where dissolved oxygen was less than 4 mg/l. Water content of surface sediment (0-1 cm) ranged from 10.1 to 76.7% while total organic matter ranged from 17.7 to 220.8 mg/g dry weight. The study on mangrove condition showed that *Rhizophora apiculata* was found dominating with highest important value index in all three areas. The result from sustainability of community's role in resource management indicated that fishers had perceived in mud crab resource and management measures at medium level which was statistic significantly related to collaborative learning (r_s=0.503, p-value<0.01) and the collaborative learning and the opinion in fishery management had positive relationship with group development and network building up with statistically significant (r=0.331, p-value<0.01, and r=0.344, p-value<0.01, respectively) at medium level. News and information perception had statistic significantly related to collaborative learning at low level (r_s=0.236, p-value<0.05). The water quality, sediment quality, and mangrove in Kapoe areas could be suitable for mud crab habitat. Only in the Naka area where water quality need to be keep monitoring. Some of mangrove areas of the inner part of Muangkluang-Kopoe-Banghin should be determined as young crab nursing ground due to the abundance of small crab in the areas. This should lead to an agreement of fishers to reduce catching small crab of size 10-20 crab/kg. Setting up the precautionary measure of mangrove encroachment, and building up of news and information perception and collaborative learning of fishers could construct the collaboration and acceptance of fishers for sustainable utilization of crab resource.

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