

DISSERTATION

RARE

**COMMUNITY-BASED MANAGEMENT PRACTICES IN THE
COASTAL FISHERIES OF SOUTHERN SRI LANKA AND
STRATEGIES FOR SUSTAINABILITY**

Submitted by

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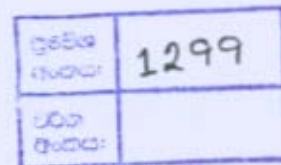
(FGS/01/01/07/2011/02)



A thesis submitted to the Faculty of Graduate Studies, University of Kelaniya

in fulfilment of the requirements for the degree of

Doctor of Philosophy in Zoology



July 2016

ABSTRACT

Coastal fisher communities of small scale fisheries in many developing countries manage common pool resources (CPRs) by implementing local regulations in their marine tenure areas. Such community-based fisheries management (CBFM) systems are not clearly visible, unless modes of fishing practices are closely observed. Based on the reconnaissance survey, beach seine and stilt fisher communities of southern Sri Lanka ($n= 8$ and 3 , respectively) were empirically studied to confirm the existence of CBFM systems and, strategies adopted by those fisher communities for sustainable use of CPRs. Study employed a holistic approach for assessing the sustainability in the social-ecological systems. Study confirmed that, having all principal organizational characteristics of traditional coastal CBFM systems, appropriators of beach seine and stilt fisheries manage the CPRs through self-governing institutions. Holistic approach for assessing the sustainability in two fisheries management systems indicated that appropriators have adopted strategies to ensure the community, institutional, ecological and socio-economic sustainability, which were the pillar components for the sustainability of any social-ecological system. The identified key strategies for sustainable resource use and management included; (1) use of indigenous knowledge, (2) accurate decision making power as an expert system, (3) existence of customary institutions in accordance with design principles, (4) institutional robustness, (5) resource use pattern, (6) altruism in collective action, fortified through robust institutions, and (7) the reciprocity. Of those, use of indigenous knowledge for accurate decision making by traditional fishers were the key strategies for maintaining community sustainability. Compliance of customary institutions with Ostrom's design principles for long enduring CPRs, and the institutional robustness ensure the institutional sustainability, in which subtractability and excludability problems have been clearly addressed, valuing the sustainability of the systems. Resource use patterns fortified by strong collective action were key strategies for maintaining ecological sustainability, which were shown by indicators; catch-per-unit-effort (CPUE) and marine trophic index (MTI). Moreover, stable CPUE and MTI over the recent decades showed that appropriators have averted the dilemmas of CPRs. Comparatively lower transaction cost and high community revenue, gained over the government-based fishery management (GBFM) systems through collective action and the reciprocity indicated socio-economic sustainability, and as such, beach seine and stilt fisheries management systems would be economically more viable over the GBFM systems. Analysis of social-ecological systems of beach seine and stilt fisheries implied that CBFM settings were alternative to conventional GBFM and, hence promising means of fishery management regime in Sri Lanka. However, the SWOT analysis questions this sustainability in the long run, due to threats arising as external attributes, which are needed to be overcome with the support of various stakeholders for future sustainability of the system, especially due to the fact that opportunities exist for improving the dialogue between fishers and fishery management agencies, the foundation of fisheries co-management.

Key words: Beach seine, Stilt fishing, Institutions, Indigenous knowledge, Expert system, Design principles, Catch per unit effort, Mean trophic index, Transaction cost, Revenue