ABSTRACT

In the recent past, culture-based fisheries (CBF) development in small village reservoirs of Sri Lanka has gained momentum. Due to the extensive availability of medium and major reservoirs in the country, further expansion of CBF in such water bodies would be important to increase the food fish supply for rural people and to improve living conditions of rural communities through elevated rural income derived from CBF. However, it is necessary to develop strategies for effective management of CBF in medium and major reservoirs, based on holistic approaches due to the reason that the fisheries in these reservoirs are essentially socio-ecological systems. In the present study, attempt were made to define effective strategies for sustainable management of CBF in five perennial reservoirs of Sri Lanka through identification of factors affecting fisheries enhancement and evaluation of institutional robustness related to CBF. It was found that standard sociological methodologies such as rapid rural appraisal and participatory rural appraisal could be effectively employed to identify issues and constraints relevant to sustainability of CBF and to mobilize rural reservoir fisher communities for planning CBF. The rural fisheries organizations (RFOs) of five reservoirs have introduced and implemented community-based management options for CBF such as strict enforcement of fisheries regulations, installation of barrier nets near the sluicegates of reservoirs to prevent escape of stocked fish, establishment of revolving fund to meet expenditure for stocking and to support sound welfare activities, and introduction of effective data recording systems which facilitated CBF planning. All these strategies had a significant positive influence on CBF production enhanced rural economy and improved living conditions of fishers. A stochastic frontier production (SFP) approach was employed to evaluate technical efficiency of CBF in five reservoirs. This indicated that efficient irrigation management facilitating further increase of input factors that would depend on the reservoir extent would be important for sustainability of CBF. Many input factors of SFP such as stocking density, number of fishers which could be further increased were depend on reservoir extent. Furthermore, institutional robustness pertaining to CBF in the five reservoirs, as evaluated against Ostrom's modified design principles was found to be strengthened through empowering RFOs which would require strong intervention of extension mechanisms of the fisheries authorities.

Key words: culture-based fisheries, technical efficiency, institutional robustness