

Chapter 27

Role of non-exploited fishery resources in Sri Lankan reservoirs as a source of food for cage aquaculture

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Abstract

The reservoir fisheries of Sri Lanka are almost entirely dependent on the alien cichlid species, most notably *Oreochromis mossambicus* (Peters) and *O. niloticus* (L.). However, small-sized indigenous cyprinid species such as *Amblypharyngodon melettinus* (Val.), *Puntius filamentosus* (Val.), *P. chola* (Hamilton-Buchanan) and *P. dorsalis* (Jerdon), which occur in high abundance in all perennial reservoirs of the country, are not exploited. These small cyprinid species can be differentially exploited using small-mesh gillnets without harming juvenile tilapias. Length frequency data of some small cyprinid species in three Sri Lankan reservoirs, collected between January and December 1999 were analysed using FiSAT. The production per biomass (*P/B*) ratios of these unexploited stocks indicate that these fish stocks have potential to withstand heavy fishing pressure and thus sustain productive fisheries.

Community-based cage aquaculture to rear fish fry to fingerling size is a recent development in some perennial reservoirs of Sri Lanka. These fish fingerlings are used to stock in seasonal reservoirs to develop culture-enhanced fisheries. Average daily growth and survival rates of fish fingerlings reared in floating net cages using a feed based on fish meal from local small cyprinids showed better performance than those in the cages where rice bran was used as feed. Their performance was more or less similar to those in cages with commercial feed. The small cyprinid resources in perennial reservoirs of Sri Lanka can thus be used to prepare fish meal as the source of animal protein for aquaculture feeds.

Keywords: cage culture, cichlids, cyprinids, mortality, *P/B* ratio, unexploited stocks.