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Emerging boost in Sri Lankan reservoir fish production: a case of adoption of past research findings

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Background

Sri Lanka is well renowned for its irrigational reservoir construction dating back to at least 2,000 years. There are also stone inscriptions indicating the levy of taxes on reservoir fishery landings dating back to first century A.D.¹. However, in the modern era, the Sri Lankan inland fishery is almost totally confined to the large number of reservoirs in the country and is known to be characterized by three features, viz. (a) it is primarily based on the exotic cichlids (mainly *Oreochromis mossambicus* and *O. niloticus*), (b) it is an artisanal fishery using non-motorized canoes with an outrigger, and (c) the gear is uniform, consisting of gill nets of 8.5 – 12.7 cm mesh². The Sri Lanka reservoir fishery is also perhaps one of the best documented in the region^{2,3,4}.

The observations that the reservoirs contain sizeable populations of many small sized indigenous, cyprinid (minor) species, that grow to a maximum size of about 8-10 cm led to research on the possibilities of harnessing these resources for human benefit. The research was conducted by three independent groups^{5,6,7,8,9,10} to estimate fishery potential of minor cyprinids in Sri Lankan reservoirs. All these studies demonstrated that the minor cyprinid stocks in perennial reservoirs could be harnessed using small meshed gillnets resulting in significant catch per unit effort, and that such a fishery will not directly and or indirectly impact on the existing fishery, the mainstay, for exotic cichlids. The researchers

showed that the recruitment of cichlids is not impacted upon as the young inhabit the littoral and sub-littoral areas, as opposed to the fully grown minor cyprinids that inhabit the open waters, as much as the adult exotic cichlids. Based on the biomass and total biological production, it was found that there is scope for an approximately a 100% increase of the total yield in Sri Lankan reservoirs through introduction of a subsidiary gillnet fishery for minor cyprinids¹¹.

Mass-balance trophic models have shown that exploitation of minor cyprinids in Sri Lankan reservoirs is advantageous to the existing cichlid fisheries through relaxing competition for plankton food resources in juvenile cichlids¹². Also on global scale, the exploitation of untapped fishery resources in reservoirs such as minor cyprinids is recognized as a potential avenue for intensification of reservoir fisheries, especially in tropical and sub-tropical countries¹³.



Dislodging the catch from the nets, a tedious task.