

Ranching in river Ganga: A protocol of practices for indigenous carps germplasm enhancement and conservation in river

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Abstract River ranching of fish species is one of the managerial techniques to conserve the native germplasm in the open waters. In the recent years most of the rivers worldwide including the river Ganga have been facing serious pressure including water abstraction, water obstruction, pollution and climate change. In this backdrop, river ranching of the identified indigenous carp species through artificial breeding of native brooders of *Labeo catla* (Catla), *Labeo rohita* (Rohita), *Cirrhinus mrigala* (Mrigal) and *Labeo calbasu* (Calbasu) were carried out in Ganga. The seeds of these species were raised to more than 100mm size before ranching to reduce the chances of natural mortality. More than 30 lakh fingerlings were ranched at different sites of the middle (Pryagraj to Farakka) and lower stretches (Farakka to Howrah) of river Ganga with the objective to enhance the IMC population keeping the native germplasm unpolluted. This study describes a protocol of river ranching of fish seeds through artificial breeding of wild fish stocks, nursery managements and release and may be suitable for other rivers also.

Key words: River Ganga; Conservation; Ranching; IMC; NMCG

Introduction

River ecology and fisheries play significant roles in biodiversity, economy and livelihood of riparian



Fig.1. Steps followed for ex-situ conservation of wild fish germplasm

fisherman community. However, in last several decades many of the rivers are highly perturbed due to different anthropocenes such as water abstraction for agricultural, industrial, urban water supply, other uses, water obstruction at dams and barrages, pollution with organic and inorganic pollutants and climate change, etc. (Dastagir, 2015) Reduced flows and habitat modifications have been identified as the major factors responsible for declining indigenous fish stock and biodiversity (Poff *et al.*, 1997). The river Ganga, originating from Gangotri glacier of the Himalayas and draining into the Bay of Bengal with a total length of 2525 km, is the largest river of India and the fifth largest in the world. The river houses a wide spectrum of fish fauna including *Labeo catla*, *Labeo rohita*, *Cirrhinus mrigala* and *Labeo calbasu*, large catfishes, mahseers,

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