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Potential and Opportunity for Ornamental Fishes in North Bihar

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Abstract

Northern part of Bihar is vastly rich in fish biodiversity and has enormous resources of water like rivers, oxbow lakes and floodplain wetlands. These aquatic resources can be utilized for capture and culture of ornamental fish species, which will certainly empower the local agri-based economy of north Bihar. Recently, We have found many potential ornamental fishes such as barb, glassfish, gourami, featherback, zebra danio, mola carplet, gangetic leaf fish, rasbora, hatchet fish, snakehead, sand loach and eel in north Bihar which are briefly elaborated in present article. The need for conservation of the indigenous fish biodiversity is also underlined.

Introduction

The holy river Ganges and its tributaries are presenting tremendous aquatic resources in Bihar. Northern part of Bihar has many tributaries networks of Himalayan originated riverine systems like Gandak, Koshi, Kamala-Balan *etc.* Moreover, the riverine tributaries are creating several geographical land structures such as oxbow lakes (locally known as *Maun*), depressed land water bodies (locally known as *Chaur*), and man-made earthen ponds (locally known as *Pokhari*). These riverine systems and their land structures support the enormous fish biodiversity in the region. During the seasonal flood period, all the water bodies act as shelter as well as feeding and breeding ground for several fish species. The economic activities and employment in north Bihar depend mostly on agriculture and fisheries sector. The enhancement of the fisheries sector by including ornamental fish culture and its trade could be a huge support to the local people involved in fishery and related activities. In north Bihar, a large number of people, particularly from fishermen community, are engaged in traditional aquaculture. They are using seasonal and perennial water bodies like *Pokhari* for aquaculture practices and cultivation of aquatic cash crops like Makhana and water chestnut in *Chaur* and low lying areas. In addition to that, there is a huge possibility of culturing ornamental fishes with aquatic cash crop and food fishes. It can give surplus income to the concerned stakeholders like fishers, exporters and importers, which is an added advantage in sustaining the agribusiness in this part of the country. In this context, we briefly describe the effective utilization of enormous aquatic resources for culture of ornamental fishes, and the associated trade potential along with the possible economic benefits to the local fishermen in north Bihar.

Present Status

Amongst the huge diversity of the fish species, mainly those fishes are considered important for ornamental purposes which are beautiful and attractive due to their

peculiar colouration, behaviour and morphology. The keeping of ornamental fish is one of the hobbies with an aesthetic value of its own, and hence has a huge trade potential globally. Internationally, the ornamental fish trade has been continuously growing. However, India doesn't find a place anywhere in top 10 exporting countries of the world, which features our neighbouring country Sri Lanka (Monticini, 2010). The north-eastern states of India are mainly involved in the ornamental fish trade. Furthermore, in the global ornamental fish trade, more than 60% of fishes are of freshwater origin. In north Bihar, we have observed the potential ornamental fishes such as Barb (Figure 1), glassfish (Figure 2), gourami (Figure 3), knifefish (figure 4) which can easily be captured from the water resources available in the region.



Figure 1: *Puntius shophor* (Swamp barb)



Figure 2: *Parambassis ranga* (Glass fish)



Figure 3: *Trichogaster lalius* (Dwarf gourami)

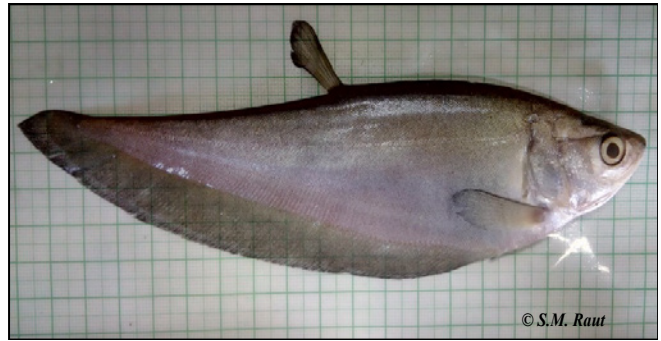


Figure 4: *Chitala chitala* (featherback/knifefish)

In addition, some more fishes are also the potential candidates for being recognized as ornamental fisheries like zebra danio, mola carplet, gangetic leaf fish, rasbora, hatchet fish, snakehead, sand loach and eel. These fishes are easily collected from the wild or floodplain wetlands by traditional gears in the monsoon and winter season, as shown in figure 5.



Figure 5: Traditional bamboo made static fishing gear

The wild-collected species can be reared in earthen ponds or cemented tanks by simple aquaculture practices. Breeding technologies and culture practices for 16 indigenous ornamental fishes have already been developed. Freshwater shining barb variety has been released for ornamental fish culture (Swain et al., 2016). Although freshwater ornamental fishes like angelfish, triggerfish, clownfish, etc., are not found naturally in north Bihar, but they can also be cultured using their well developed rearing practices under the incentives of high market price and tremendous international demands.

Opportunity

Aquatic resources and fish biodiversity both are abundant in north Bihar. Nearly 70 fish species have been recorded by us, out of which, more than a dozen species have the potential to be cultured and marketed as ornamental fishes. Ornamental fishes have many advantages as they are relatively smaller in size, easily manageable, require less area, economically viable, and have very high demand, fetching, thereby high market prices. Thus, this

could be a highly remunerative venture in north Bihar. The abundantly available *Chaur*, *Maun*, and *Pokhari* of north Bihar can be utilized for this purpose. Promotion of ornamental fishery in north Bihar can give a boost to the allied sectors as well, which include packaging unit, live and artificial feed manufacturing unit, ornamental aquatic plant unit, tank fabrication and accessories unit and quarantine facilities centres. Altogether they can generate huge opportunity of employment for the rural communities, can increase per capita income of the state, and can also earn foreign exchange for the country. It may also reduce the migration of local labour force by generating livelihood options in their own region. For sustenance of the ornamental fish ventures in long term, conservation of the local fish biodiversity as well as water resources is also of critical importance.

Conclusion

There is sufficient fish biodiversity in north Bihar. We identified more than a dozen fish species which has potential to be cultured as ornamental fishes.

Abundantly available water resources in the region can be used for capture and culture of these fish species, which will certainly create huge employment opportunities and generate additional livelihood options for the local people involved in fish farming and trading. The fish diversity needs to be explored further for its utilization in time to come. It also needs to be conserved for the sustenance of the culture and trading of ornamental fishes in long term.

References

- Monticini, P., 2010. The ornamental fish trade production and commerce of ornamental fish: technical-managerial and legislative aspects, Globefish research programme, FAO, 102, 7.
- Swain, S.K., Bairwa, M.K., Sivaraman, I., 2016. Ornamental fish culture, ICAR-CIFA Extension Series, 21.