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# Opportunities and Challenges of Aquariculture for Entrepreneurship Perspective: An Assessment With Reference To Bihar

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**ABSTARCT**

*The fisheries sector is a large source of employment and export revenue, a key dietary Input and an important element of local livelihood. Fish are very diverse animal and can be categorized as many ways. Aquariculture is the culture of attractive, colorful Ornamental fishes of various characteristics, which are reared in a confined aquatic system. Farmers and hobbyists mainly grow it. Presently, Ornamental fish production globally is a multibillion dollar industry. According to FAO, 2012 In India the Ornamental fishes contributing about 1% of the total ornamental fish trade. In India Kerala, Tamil Nadu and West Bengal mainly practice ornamental fish farming. The Ornamental fish trade in India although growing continuously, our contribution to the Global trade is insignificant. it is estimated that 1.25 percent of Indian urban household are keeping an aquarium.*

*Bihar has great potentials in Aquarium fish production due to the availability of rich biodiversity of species, favorable climatic conditions and availability of affordable labor cost. Bihar is blessed with Vast and varied fisheries and aquaculture resources. These resources are in the form of rivers, reservoirs, lakes, mauns, chaurs, irrigation canals, ponds and community tanks. The fishers see these as complementary employment—depending on the season, they fish or farm. Fisheries sector of this state is an important, most promising and fast growing food farming sub-sector of Bihar accounting 7.97% annual growth rate. Bihar have enough potential for diversification of aquaculture like introduction of ornamental fish culture and propagation of ornamental aquatic plants. The availability of immense aquatic resources of the state and huge population of fisher folk resources can promote backyard small scale ornamental fish farming to satisfy the demand of fish but also plays an important role in gainful employment generation to youth and woman fisher folk, food and nutritional security, poverty*

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*alleviation, state income growth and finally socio-economic up-gradation of the rural community. Govt. of Bihar, Animal and Fisheries Resources Department has taken initiative to encourage fresh water from farming ornamental fish culture and propagation of ornamental aquatic plants and air-breathing fish culture, in 11th five years plan. Recently a training center on ornamental and production has been established recently at ICAR Research Complex for Eastern Region at Patna. It will impart training to rural women for their empowerment through 5 days training programme on "Ornamental Fish Culture and Management for Livelihood Improvement of Rural Women" at ICAR Research Complex for Eastern Region. NFDB, N Hyderabad Introduces Need of Best Management Practices to Freshwater ornamental fish production, its addresses the whole management practices of ornamental fish culture in an umbrella within all states of India. NCDC and NABARD is currently working to promote the development and culture of ornamental fishes viz. activities are being taken up, in state. The Bihar fish jalkar management 2006. 2007 .2010 and 2018 (amendment) also assure employment to all.*

*This study is a doctrinal review on ornamental fish culture in state with the aim to focus on the new opportunities of backyard small scale ornamental fish farming to create entrepreneurship to fishers and also for many hobbyist, it also can be helpful to conserve the biodiversity's of various species which have both the nutritional and ornamental values. Bihar has blessed with these series of valuable species. First, we should develop alternatives as, specialized training program should arrange for fisher and especially fishers women for identification and culture of ornamental fishes. Second, it needs necessary policy framework, various infrastructure, credit and institutional support, third develop a chain of stable marketing facilities from producers to consumers. It could play significant role in the global trade while providing large number of employment in the rural areas.*

**Keywords:** Aquariculture, Ornamental Fish Culture, Ornamental fish Biodiversity, Aquatic Resources, fisher folk, Entrepreneurship**.**

## Introduction

Aquarium keeping has gained popularity as a hobby, and selling ornamental fish has recently become very competitive. In developing nations like India, the trade in ornamental fish can be extremely important to the economy as a means of generating foreign cash as well as a possible source of rural employment. An essential business aspect of aquaculture, aquaculture meets positive needs and promotes environmental sustainability. Small-scale aquaculture can

increase the output of live bearers, improving the socioeconomic standing of Indian fishermen. Even though Andhra Pradesh holds India's top spot in aquaculture, the region has not yet been fully developed. Inland aquatic resources, including rivers, canals, reservoirs, ox-bow lakes, flood plain lakes, ponds, and tanks, are abundant and diverse in the state of Bihar.. One of the emerging industries that has the ability to enhance the socioeconomic situation of the rural community is fishing. Not only do ornamental fish play a significant commercial role in fisheries, but they also add aesthetic value and aid in environmental upkeep. Our contribution to the ornamental fish trade worldwide, however, is minuscule. Approximately 210 indigenous species of ornamental fish are currently exported to various nations across the world. Colisa, loaches puntius, glass fish, eels, and other small decorative fish can be found in the wetlands and river systems of the West Champaran, East Champaran, Sitamarhi, Muzaffarpur, Madhubani, Rohtas, and Bhojpur districts of Bihar. Aside from heavily flood-prone locations, almost all of Bihar's districts are candidates for aquaculture. The water bodies are blessed with inaugural potential of ornamental fish resource, especially North-Bihar have huge natural resources of indigenous ornamental fishes and diversified as compared to the South-Bihar. In spite of the fact that the freshwater habitats of Bihar proliferate many varieties of ornamental fishes, buy only very few of them have been introduced to international market. The knowledge about, adaptive behavior, habitat characteristics, population structure, distribution pattern and biodiversity status are vital for conservation and development of various captive breeding techniques. These aquarium fishes are rich in both nutrient value and ornamental values. But, there is lacking in awareness about their distribution pattern, population characteristics, diversity, behavior, captive breeding. Therefore, it is necessary to organize and develop the sector with a view to provide employment to rural youth as entrepreneur and strengthen women and the economy of the state. The effort is made to mobilise and identify aquarium fishes from different districts of Bihar. The main objective of this study is to analyze the status of ornamental fish culture with employment perspective.

**Methodology**

The state of Bihar is selected as Area of study. To examine the concept and to assess and analyze the challenges, its need to know where, why and how the issue is resolved to ensure participation towards Aquariculture. To all these sight its need to analytical study about whole process related to concerned topic. Study complete through study of books journal, publication, newspaper, article, published and non-published paper etc. about, literature of concerned topic about ornamental fish species production ,through aquariculturesocio

economic upliftment of fishers, Fisheries policy to encourage ornamental fish culture, employment generation after studying marketing frame by various government publications
Descriptive: The present scenario of ornamental fish culture with reference to Bihar, the study of wetlands in Bihar, ornamental fish species found in Bihar.

Review: Literature review about backyard ornamental fish culture process, its scope and opportunities in the state of Bihar, the marketing structure and challenges for employment purpose, on fisher's employment in Bihar, action plan to use the ornamental resources and fish species to employment generation, govt. programme to initiate aquariculture.

**Statement of Problems and prospects of ornamental fish sector In Bihar**

The ornamental fisheries industry is dealing with a number of issues, both technological and economic. Lack of technical expertise and scientific knowledge on culture-related issues including breeding, feeding, and health management are the main constraints. The majority of business owners are unaware that this developing industry/sector generates significantly more revenue than prawn culture while requiring significantly less investment and risk. Due to a lack of infrastructure, the state of Bihar has so far been unable to establish any framework for the trading of ornamental fish.

Due to ignorance, the majority of India's native ornamental fish are cheap and are consumed as food in rural and small towns. In many ways, the ornamental fish trade in India is not well-organized.

In India and the state of Bihar, there are currently no appropriate Acts or policies for the growth of the ornamental fish sector. More government initiatives, such as offering incentives to start ornamental fish production facilities, might draw significant private investment to this sector, leading to the creation of more job opportunities and an improvement in the standard of living for the local population. The ornamental fish farming industry can be developed significantly in the area with the diligent efforts of all stakeholders, and as a result, it will gain a larger share of the global market. By establishing ornamental fish production facilities in various areas of the region, public-private partnerships can be encouraged, making this industry more vibrant and lucrative for entrepreneurship creation and livelihood development.

**Scenario of ornament fish culture in Bihar as compare to other state**

The aquarium interest is roughly 70 years old in India. In both the Western Ghats and the North-Eastern hills of India, there is a great variety of freshwater fish. Of the 300 freshwater fish species found in the Western Ghats, 155 are regarded as ornamental, with 117 of those being

indigenous to the region. Only a small portion of the attractive fish diversity is currently used in the domestic ornamental fish trade, and the majority of ornamental fishes offered in India are exotic kinds. Even though there are many indigenous fish species with great potential as ornamental fish, they have not been used appropriately. Diverse fish species found in the Western Ghats make good choices for the ornamental fish trade. More than 100 local freshwater ornamental species. Some of the species have high price in the world market and also support trade outside the country. Breeding nature of this ornamental fishes are broadly classified as live bearers and egg layers. Fish, barbs, koi carp, the Western Ghats have potential of streams and rivers are as a rich source of the ornamental fish is yet to be recognized. The majority of fish in aquariums come from freshwater, with the remainder coming from brackish and marine waters. About 90% of the freshwater ornamental species are cultivated, and only 10% are wild species. The opposite is true for marine and brackish water species. Around 85% of the market originates from the north-eastern regions, with the remaining 15% coming from the southern Indian states. The North Eastern states are home to roughly 58 native species of ornamental fish, which are currently exported. The demand for many native ornamental fishes varies from year to year. The majority of fish species from north-eastern states are traded; in 2014–15, 69.26 tonnes of these fish were exported, valued at 566.66 crores of rupees. On the whole, states trade, these fishes are exported to the tune of 69.26 tons, having the value of Rupees 566.66 crores in 2014 – 15[210]. On an average, during the period 1995 to 2014an Annual growth rate of about 11 percent has been recorded[211]. A vast number of native species has contributed significantly to the development of ornamental fish industry in the country. North-eastern states, West Bengal, Kerala and Tamil Nadu are blessed with potential indigenous ornamental species. About 90% of native species (85% are from northeast India) are collected and reared to meet export demand.[212]In India from 1969 Ornamental fish trade started with export earnings of US $ 0.04 million[213]presently, nearly about 100 native species are cultured as aquarium fish[214]. There is also a great demand for exotic species due to its color, shape and appearance. More than 300 exotic species are covered in the Indian market to ornamental fish trade, approximately 200 species are breed in India. At least 150 commercially important ornamental fish species and export mainly indigenous freshwater species collected from rivers.

[210]Growth And Performance Of Marine Fish Exports Of India, Satish kumar M And Gururaj B
[211]Handbook of fisheries statistics2020 , ministry of fisheries , animal husbandry publication
[212]Ornamental fish farming in India,https://vikaspedia.in/agriculture/fisheries/fish-production/culture-fisheries/ornamental-aquaculture/ornamental-fish-farming-in-india
[213]https://www.ncdc.in/documents/downloads/161804052015.-Sample_DPR-Ornamental-Fish-Culturchange.pdf
[214] Swain, S.K., Bairwa, M.K., Sivaraman, I., 2016. Ornamental fish culture, ICAR-CIFA Extension Series, 21

90% of India exports go through KolkataPortfollowedby, 8% from Mumbai and 2% from Chennai. 27 countries[215]. Presently, India represents a total of 400 freshwater ornamental fish belonging to 175 genera and 50 families (Rand and Gupta, 2017) out of which West Bengal contributed 176 fresh water indigenous ornamental fish (Mahapatra et al., 2014b) that is about 44%. A total of 250 freshwater ornamental fish of the NEH region, Assam contribute the maximum number 187 species (Mahapatra et al., 2004a). The rich ornamental fish diversity of the Eastern and North Eastern region have been attributed to many reasons, viz., the diverse geographical conditions that results in the formation of a variety of torrential hill streams, rivers, lakes and swamps, and drainage patterns, which include the Ganga, Bhagirathi, Teesta, Damodar, Mahananda, East Kolkata Wetlands systems. About 85% of indigenous fish species are mostly collected from river, streams etc. and cultured to meet the market demand (Mahapatra, 2018). Due to over exploitation and ecological degradation some species are not available frequently although earlier found as dominant species. In-spite of having huge potentiality, India's contribution to the international ornamental fish trade is about negligible. If the resources are managed properly, India can be one of the leaders of the world ornamental trade in coming years.

CIFRI report on inland mapping of Bihar says that the total maximum water spread area is 1,30,492hac, in which mostly resources is underutilized and untapped[216]. 60 lakh population of fishers livelihood based on fish culture. A total no. of 36 species with 16 families recorded in KusheshwarAsthanChaur, Darbhanga[217], beside this , and a huge series of ornamental fish species found in Kanwar lake wetland , Begusarai , wetlands systems of Darbhanga , West Champaran, , Muzaffarpur,Sitamarhi, East Champaran, Madhubani, Rohtas and Bhojpur districts , kosi and gangetic region of Bihar[218]( As seen in table no -1) . Presently, there is big sustainability threat to these resources, this needs for an urgent attentions on formulating sound ecological and economic strategies.

[215]ORNAMENTAL FISH EXPORTS FROM INDIA PERFORMANCE, COMPETITIVENESS AND DETERMINANTS

[216]Das B. K., Sahu S. K. and Parida P. K., (2022). Inland water bodies of Bihar, ICAR-CIFRI, Barrackpore.

[217]KusheshwarAsthanChaur (North Bihar) Status and prospects for fisheries development, ICAR-CIFRI, Barrackpore

[218]Pandey G, PGT,(Geography), India Status of Wetlands in Bihar: Degradation and Their Sustainable Management,

| S. No | Scientific Name | Common Name |
|---|---|---|
| 1 | Puntius phutunio | Dwarf barb |
| 2 | Puntius chola | Swamp barb |
| 3 | Puntius conchonius | Rosy barb |
| 4 | Puntius sophore | Spot fin swamp barb |
| 5 | Puntius ticto | Two spot barb |
| 6 | Puntius terio | One spot barb |
| 7 | Puntius gelius | Golden barb |
| 8 | Puntius sarana | Olive barb |
| 9 | Oreichthyscosuatis | High fin barb |
| 10 | Rasbora den icon ius | Dark line rasbora |
| 11 | Rasbora rasbora | Scissors tail rasbora |
| 12 | Nemacheiluspavonaceus | Horizontal stripe loach |
| 13 | Nemacheilus triangularis | Triangular banded laoch |
| 14 | Nemacheilusbotia | Leopard loach |
| 15 | Lepidocephalusthermalis | Spiny loach |
| 16 | Botialohachata | Tiger loach |
| 17 | Botiadario | Necktie loach |
| 18 | Botiadayi | Hora loach |
| 19 | Mystustengra | Tiger zebra catfish |
| 20 | Mystusvittatus | Striped dwarf catfish |
| 21 | Mystusbleekeri | Day's Mystus |
| 22 | Mystuscavasius | GangaticMystus |
| 23 | Pseudeutropiusatherinoides | Indian patasi |
| 24 | Aorichthysaor | Long whiskered catfish |
| 25 | Salmostomaphulo | Fine scale razor belly minows |
| 26 | Ompokpabda | Pabda catfish |
| 27 | Chacachaca | Indian chaca |
| 28 | Wallago attu | Fresh water shark |
| 29 | Bagariusbagarius | Gangetic goonch |

| S. No | Scientific Name | Common Name |
|---|---|---|
| 36 | Colisalalia | Dwarf gourami |
| 37 | Colisasota | Sunset gourami |
| 38 | Anabas testudineus | Climbing perch |
| 39 | Xenentodoncancila | Gar fish |
| 40 | Ch ann a marulius | Giant snakehead |
| 41 | Channa orientalis | Asiatic snakehead |
| 42 | Channa gachua | Pig my snakehead |
| 43 | Channa stewartii | Tank gobi |
| 44 | Glossogobiusgiuris | Tank goby |
| 45 | Pisodonofisboro | Blind eel |
| 46 | Mastasembelusguntheri | Small eel |
| 47 | Nandus nandus | Leaf fish |
| 48 | Amblypharyngodon mola | Mola carplet |
| 49 | Chanda ranga | Glass fish |
| 50 | Chanda nama | Elongated glass perchlet |
| 51 | Macrognathuspancalus | Spiny eel |
| 52 | Mastacembelusarmatus | Long eel |
| 53 | Channa striatus | Kobra snakehead |
| 54 | Macrognathus aculeatus | Peacock eel |
| 55 | Notopteruschitala | Clown featherback |
| 56 | Notopterusnotopterus | Knife fish |
| 57 | Barilius bola | India trout |
| 58 | Bariliusbendelisis | Hamil ton's baril a |
| 59 | Pisodonophisboro | Rice paddy eel |
| 60 | Labeocalbasu | Calbasu |
| 61 | Labeo bata | Bata |
| 62 | Brachydaniorario | Zebra danio |
| 63 | Oreichtyscosuatis | High barb |
| 64 | Chela laubca | Indian hatchet fish |

| | | | | | |
|---|---|---|---|---|---|
| 30 | Hara jardonii | Stone catfish | 65 | Pangasius pangasius | Pungas |
| 31 | Gangatacenia | Clown catfish | 66 | Badisassamensis | Scarlet badis |
| 32 | Glyptothoraxannadalei | Stone catfish | 67 | Dario devario | Devario danio |
| 33 | Eristhistespussilus | Gangetic erethiste | 68 | Noemachielusrupeli | Long snouted loach |
| 34 | Tetradoncutcutia | Ocellated puffer fish | 69 | Olyralongicaudat | Long fighting catfish |
| 35 | Colisa fasciatus | Giant gourami | 70 | Pseudeutropiusatherinoides | India potasi |
| | | | 71 | Botiarostrata | Geto loach |
| | | | 72 | Danio dangila | Giant leopard danio |
| | | | 73 | Garragotylagotyla | Brown algae eater |
| | | | 74 | Aplocheilus panchax | Blue panchax |
| | | | 75 | Ompokbimaculatus | Shovel mouth catfish |
| | | | 76 | Nangranangra | Kosinangra |
| | | | 77 | Ctenops nobilis | Indian paradise fish |
| | | | 78 | Chela dadiburjori | Orange chela |
| | | | 79 | Hara hara | Butterfly catfish |
| | | | 80 | Botia striata | Striped loach |

**Table No -1 List of ornamental Fish diversity In Bihar**

**(Source :( http://www.cifri.res.in/Bulletins/Bulletin%20No.191.pdf)**

districts , kosi and gangetic region of Bihar[219]( As seen in table no -1) . Presently, there is big sustainability threat to these resources, this needs for an urgent attentions on formulating sound ecological and economic strategies.

In Bihar, the sacred Ganges and its tributaries offer abundant aquatic resources. The Gandak, Koshi, Kamala-Balan, and other Himalayan-originated riverine systems have several tributary networks in the northern region of Bihar. Additionally, the riverine tributaries are forming a number of geographical land structures, including oxbow lakes (known locally as Maun), depressed land water bodies (known locally as Chaur), and artificial earthen ponds (known locally as Pokhari). The vast fish biodiversity in the area is supported by these riverine systems and their associated landforms. Every body of water serves as a shelter, feeding site, and breeding ground for many fish species throughout the seasonal flood period. The agricultural and fishing industries are mostly responsible for the economic activity and employment in

[219]Pandey G, PGT,(Geography), India Status of Wetlands in Bihar: Degradation and Their Sustainable Management,

north Bihar and improvement of the fishing industry. 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.

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 coloration, 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 neighboring country Sri Lanka[220]. 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, glassfish, gourami[221] , etc., which can easily be captured from the water resources available in the region. In Bihar many species are cultured due to their well-developed rearing practices under the incentives of high market price and tremendous international demands.

**Opportunities in Aquariculture in the State of Bihar**

Bihar has an abundance of fish biodiversity and aquatic resources. We have identified about 70 different kinds of fish, and more than a dozen of those might be raised and sold as ornamental fish. Due to their relatively small size, ease of management, need for less space, economic viability, and extremely high demand, ornamental fish have many advantages and thus command high market prices. Therefore, in north Bihar, this would be a very lucrative endeavour. North Bihar's Chaur, Maun, and Pokhari, which are plentiful, can be used for this. The development of ornamental fisheries in north Bihar can benefit related industries including packaging, live and artificial feed production, and decorative aquatic plant production. 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

[220]Monticini, P., 2010. The ornamental fish trade production and commerce of ornamental fish: technical-managerial and legislative aspects, Globefish research programme, FAO, 102, 7

[221] Raut et al., 2020. Potential and Opportunity for Ornamental Fishes in North Bihar. Research Today 2(7): 677-679.

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.. The irregularities in the earning patterns of their men counter parts coupled with need for livelihood sustainability force most of the women to earn from a variety of fishery related activities like ornamental fishery and its allied sectors. Women as entrepreneurs can contribute much to the national productivity, generate employment opportunities, develop economic independence, improve standard of living leading to self-confidence, enhanced awareness and sense of achievement. As such women fit into this particular entrepreneurial avenue owing to their enormous innate patience provided they are trained. Considerable effort is needed to capture the existing and latent entrepreneurial potential of women in this sector. About ten per cent peoples in the world keep aquarium in their homes. People keep fish in their homes for variety of reasons: for decoration, children's education, enjoyment, good fortune and to collect rare species or even to propagate them. Indian waters possess a rich diversity of ornamental fish. This has been well established that aquarium fish can fetch about 100 times morepricethan the food fish and marine ornamentals are about ten times costlier compared to freshwater fishes. Profitability of an ornamental fish-exporting unit works out to be highly lucrative, provided the activity is taken up on scientific lines with appropriate marketing strategies.

The ornamental fish culture and breeding activity is possible not only on large scale but on a small scale basis as well. It provides good opportunity even to small entrepreneurs. Institutional funding for research and development activities is, however, essential. Commercial banks can formulate schemes for extending financial assistance to prospective entrepreneurs for short-term training programs on production of ornamental fishes. Two of the major areas which require urgent attention are (a) in-house breeding of selected species of marine ornamental fishes which are in great demand to release the pressure on wild capture and (b) scheme for educating/training of fisher folk in more skilled and specialized techniques of collecting, handling, sorting and transport of ornamental fish which could revolutionize the fishery industry to greater extent.

In the 11th five-year plan, the Bihar government's Animal and Fisheries Resources Department has taken steps to promote fresh water fish farming, decorative aquatic plant propagation, and air-breathing fish culture. Recently, state and federal governments introduced programmes specifically designed to enhance ornamental fish culture, including SaatNischay-2, which was created to establish and maintain ornamental fish culture and marketing. Recently, the ICAR Research Complex for Eastern Region in Patna built a training centre on decorative and

manufacturing. At the ICAR Research Complex for Eastern Region, a 5-day training programme on "Ornamental Fish Culture and Management for Livelihood Improvement of Rural Women" will be provided to empower rural women. Need For Best Management Practices in Freshwater Ornamental Systems, by NFDB, Hyderabad. NCDC[222] and NABARD[223] are taking in promoting the development and culture of ornamental fishes and so far various activities are being taken up, in state. The Bihar fishjalkar management 2006, 2007, 2010 and 2018 (amendment) also assure employment to fishers. According to jalkar management act ,Section 5 of the said Act 13, 2006, a following new subsection (iv) shall be added by amendment 2007, that Settlement of Jalkars in the state is to be aimed at maximizing fish production and productivity scientifically and increase more and more avenues of employment for fisher folk." Ornamental fish culture can be the best initiative towards improve employment for the fisherman community.

**Challenges facing in ornamental fish culture and trade**

The sector needs systematic identification of potentially significant ornamental fish varieties, in-depth research on their biological aspects and behaviour, breeding, and husbandry despite having a huge potential for ornamental fish diversity and both domestic and international demand. Ornamental fish keeping at home is reportedly becoming one of the most well-liked pastimes worldwide. The second-biggest hobby in the world is keeping aquariums. The aquarium fish and accessory market is quickly growing in prominence because of all the fantastic earning potential. Growing interest in maintaining aquarium around the world is due to their minimal space requirements compared to other pets. An aquarium may be put up and maintained in any position in the home where there is open space or diffused light, and it is relatively expensive to do so. Many individuals around the world have found ornamental fish care and distribution to be appealing since it offers not only elegance, beauty, and enjoyment but also potential financial rewards. Aquarium keeping as a hobby is picking up steam in developing nations like India.

**Conclusion**

[222]. The National Cooperative Development Corporation (NCDC) was established by an Act of Parliament in 1963 as a statutory Corporation under the Ministry of Cooperation. Planning, promoting and financing programmes for production, processing, marketing, storage, export and import of agricultural produce, food stuffs, certain other notified commodities e.g. FISHERY.

[223]National bank of agriculture and rural development, which is a government setup financial institution for the support and to promote rural development and sustainable fisheries in the country.

There is sufficient fish biodiversity in 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 culture and capture 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. *Firstly, we* should develop alternatives as, specialized training program should arrange for fisher and especially fishers women for identification and culture of ornamental fishes. *Secondly,* it needs necessary policy framework, various infrastructure, credit and institutional support, *thirdly,* there should be developed a chain of stable marketing facilities from producers to consumers. It could play significant role in the global trade while providing large number of employment in the rural areas.

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