



**Biotica
Research
Today**
Vol 4:11
2022

768
770

Fisheries in Assam: Status and Way Forward

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Open Access

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Keywords

Assam, Fish production, Potential, Resources

Article History

Received on: 01st November 2022

Revised on: 09th November 2022

Accepted on: 10th November 2022

E-mail: bioticapublications@gmail.com

How to cite this article?

Nandi *et al.*, 2022. Fisheries in Assam: Status and Way Forward. *Biotica Research Today* 4(11):768-770.

Abstract

Assam has rich and diverse fisheries resources in the form of rivers, floodplain wetlands, forest fisheries, ponds, etc. and endowed with rich fish diversity. Total fish production of Assam in 2021-22 was 4,17,000 MT. During 2019-20, the state ranked 12th in terms of overall fish production and 7th in inland fish production in the country. The state occupies third position after West Bengal and Jharkhand with respect to fish seed production. Per capita fish consumption in the state stands at 11.72 kg year⁻¹. Though production has increased over the years, there is still tremendous scope for improvement, considering that majority of its resources is under-utilized till date. Keeping in view these facts, the present article focuses on existing status of fisheries in the state and the measures needed to augment fish production.

Introduction

Assam is the most water resourceful state in the North East part of the country. Fish plays a significant role in the lives of the people in the state because almost 90% of the population prefers fish in their meals. Fish farming has always been a popular activity in rural areas. As a result, the fishing industry is regarded as a significant economic activity in the socioeconomic context of the state since it offers opportunities for the creation of livelihoods, particularly in rural regions, through fish production and its connected activities. Fishery is a priority sector of Assam owing to its significance towards achieving nutritional security, income improvement and livelihood enhancement for millions. The state is gifted with enormous fisheries resources, which has the potential to act as protein source for its ever-increasing population. There is a large network of perennial rivers, all of which are characterized by very large seasonal variations in their discharge due to seasonal rainfall and dry periods in addition to large area of floodplain wetlands, ponds, etc. Located in north-east region of India, a biodiversity hotspot, the state harbors a rich variety of indigenous and endemic fish fauna. Fish production from available resources of Assam has been increasing continuously but the present productivity of these resources is far from their potential. So, this article attempts to bring out the present scenario on fish production, available resources, fish diversity and opportunities to boost fish production of the state.

Fisheries Resources of Assam

Abundant fisheries resources of Assam comprise of both used and unused resources. Fishery resources of the state comprises of beels, ponds and tanks, rivers, swamp/ derelict water bodies, reservoirs, forest waterbodies, etc. (Table 1). The state is endowed with 2 major river systems, namely Brahmaputra and Barak, which plays significant role in topographical land formation, hydrological balances, ecology,

population distribution culture and economy and form the mainstay of fisheries sector. Floodplain wetlands, locally known as beels and formed primarily due to meandering nature of Brahmaputra, Barak and their tributaries are one of the major fisheries resources of the state. Besides, the state has also its fair share of ponds and tanks. Schemes implemented by Department of Fisheries, Govt. of Assam have resulted in increase in number of ponds over the years.

Table 1: Fisheries Resources of Assam (2019-20)

Sl. No.	Resources	No.	Area (ha)
1	Beel Fisheries	1,903*	61,763
		Total	1,00,815
2	Ponds and Tanks	4,75,404	81,346
3	Rivers	2 Main Rivers; 53 Major Tributaries	1,64,481.65 (4,820 km)
4	Forest Fisheries	453	4782
5	Swamp/ Derelict Water Bodies	11,694	91,909
6	Reservoirs	2	1,813

*Registered Beels; (Source: Anonymous, 2020)

Apart from various water resources, the state has a total of 263 numbers of registered raw fish markets and 2 dry registered fish markets. Kamrup (Rural and Metro) combined has a maximum of 36 registered raw fish market. There is registered dry fish market one each at Morigaon and Kamrup districts. With 500 private and 21 government hatcheries, the state producing valuable quality fish seed and contributing to meet ever-increasing demand. There are 6 numbers of registered commercial units dealing with ornamental fish (1 in Goalpara and 5 in Nagaon) and 17 registered ornamental fish production units under public and private sector in the state.

With regard to fish production potential, for floodplain wetlands of Assam production potential ranges from 1,000-1,500 kg ha⁻¹year⁻¹, while present fish production from these resources was found to be 704.60 kg ha⁻¹year⁻¹ in wetlands practising culture-based fisheries and 206.4 kg ha⁻¹year⁻¹ in wetlands without supplementary stocking. Fish yield rate from River Brahmaputra is around 190 kg km⁻¹year⁻¹ against a potential yield of 900 kg km⁻¹year⁻¹, while potential yield from its tributaries is estimated to be 450 kg km⁻¹year⁻¹. As per information obtained from Department of Fisheries, Assam, fish production from ponds and tanks in the state is 2271.94 kg ha⁻¹year⁻¹ during 2018-19.

Fish Diversity

A total of 217 fish species has been recorded from the state of Assam (Bhattacharjya et al., 2003), belonging to 106 genera, 37 families and 11 orders. Bhattacharjya

et al. (2017) reported 141 finfish species belonging to 84 genera and 29 families occurring in the river stretch in Assam. In terms of catch contribution, the share of miscellaneous species in total catch has increased considerably and forms the most dominant group with *Aspidoparia morar*, a small sized minor carp, as the most dominant species in Brahmaputra and Barak rivers in Assam, occurring at all major landing centres (Borah et al., 2014). Floodplain wetlands also contributed considerably to the ichthyofaunal richness of Assam. Deepor beel, one of the important wetlands in Assam (a Ramsar site), supported 68 fish species (Bhattacharjya et al., 2021). 69 species of fishes belonging to 49 genera under 24 families and 11 orders have been recorded in Sone beel, the biggest wetland in Assam. A number of exotic fish species has been reported in the water bodies of Assam including the three exotic carps viz., *Cyprinus carpio*, *Ctenopharyngodon idella* and *Hypophthalmichthys molitrix*. In addition to the above three exotic carps, bighead carp (*Hypophthalmichthys nobilis*) and tawes (*Barbonymus gonionotus*) are regularly stocked in many of the floodplain wetlands of Assam (Bhattacharjya et al., 2017). Taking all the published reports and taking the list prepared by Bhattacharjya et al. (2003) as the base, it has been found that 217 finfish species have been recorded and reported from Assam, which belongs to 106 genera, 37 families and 11 orders. Family-wise distribution shows that Cyprinidae is the most dominant group comprising 80 fish species, followed by Sisoridae with 23 species and Balitoridae with 17 species.

Production of Fish and Fish Seed

Total fish production of Assam in 2021-22 was 4,17,000 metric tonnes (MT), an increase of 1,23,000 MT since 2015-16 (2,94,000 MT). The state ranks 12th in terms of overall fish production and 7th in inland fish production in the country during 2019-20. This gradual increase in fish production of the state can be attributed to the increased adoption of improved farming practices among fishers/farmers, increase in the number of people taking up fisheries as a venture and increase in area under fish farming. Quality fish seed is the most important factor which has direct impact on the growth and health of fish. The state occupies third position after West Bengal and Jharkhand with respect to fish seed production in the country during 2019-20. During 2021-22, the state produced 18,219 million fry. Over the last few years, the state has witnessed an increasing trend in fish seed production. Per capita fish consumption in the state has also increased over the years and stands at 11.72 kg year⁻¹. Nagaon is the leading district in terms of fish production in the state, while in terms of fish seed, Barpeta district leads the way. Details of fish and fish seed production in the state during 2001-02 to 2021-22 is given in Figure 1.

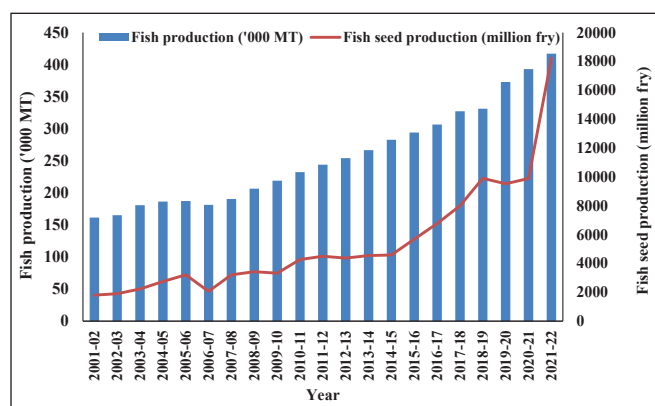


Figure 1: Fish and fish seed production of Assam

Way Forward

Although rich in fisheries resources and self-sufficient in fish seed production, the state is still lagging behind in harnessing full potential of fisheries sector, due to lack of proper strategy and under-utilization of available resources. The present situation demands conservation and utilization of fisheries resource based on responsible fishing practices and environmentally sound management programmes with focus on sustainable utilization of natural resources, augmenting fish production by aquaculture, facilitating post-harvest practices, value addition and market linkages. All these can help in achieving the vision of becoming an exporting state instead of an importing in near future.

Conclusion

Fisheries comes under primary sector in terms of gross state domestic product (GSDP), contributes 14.3% of agricultural GSDP and 2.4% of overall GSDP. Government of Assam through various schemes like PMMSY, CMSGUY, RKVY, etc. has been instrumental in uplifting this sunrise sector. This is evident from the fact that production of fish has increased in the state over the years and annual per capita fish production (11.72 kg) is higher than the national average of 6.46 kg year⁻¹ (in terms of total population). Recent

scenarios show migration of people from rural areas to cities in search of livelihood as agriculture (major occupation of Assam) has become less attractive and less profitable. Land is lying fallow and unused. Fisheries as a much more profitable venture can be alternative to this problem and an answer to boosting income and livelihood of rural people. Accurate documentation of resources, identification of potential areas, human resource and bringing them under the ambit of fish farming, awareness among people on scientific fish farming, technical support from concerned agencies and sustainable utilization of natural resources can improve fish production of the state manifold.

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