

Growth and Sustainability of Inland Fisheries in Karnataka (2013-2023): Resources, Initiatives, and Future Prospects

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SUMMARY

Karnataka's inland fisheries sector is a vital contributor to the state's total fish production, utilizing a wide range of aquatic resources such as reservoirs, rivers, lakes, ponds, tanks, and fish sanctuaries. In 2022-23, the state produced 4.94 lakh tonnes of inland fish, ranking 7th among India's inland fish-producing states. This growth has been driven by government initiatives, including fish seed production, river ranching programs, and the development of in-situ rearing sites near reservoirs. The state's resources, comprising 2.72 lakh hectares of reservoirs, 5813 kilometers of rivers, and over 28000 departmental and Gram Panchayat tanks, support the cultivation of species like Catla, rohu, mrigal, and common carp. Post-COVID-19, inland fish production surged by 91%, aided by increased stocking of fish fingerlings and improved management practices. Advancing the sector with modern technologies like recirculating aquaculture systems and biofloc technology can ensure sustainable growth, higher productivity, and socio-economic benefits for communities.

INTRODUCTION

Karnataka, situated in southwestern India, covers a total area of 191,791 km², making it the 6th largest state in the country. With 31 districts and a population of around 68 million, the state is home to a diverse and flourishing fisheries sector. It benefits from a 320-kilometer coastline along the Arabian Sea, complemented by a vast network of rivers, estuaries, and inland water bodies. The fisheries sector plays a crucial role in Karnataka's economy, supporting thousands of livelihoods, ensuring food security, and contributing to the socio-economic development of both rural and coastal areas.

Resources:

Karnataka has abundant natural resources, making it well-suited to achieve high fish production. The fisheries resources in Karnataka can be broadly classified into two categories:

- Inland fishery Resources
- Marine Fishery Resources

Inland fishery Resources:

Karnataka is endowed with various inland water bodies that support fishery activities for many fisheries dependent people. These inland resources consist of Rivers, lakes, ponds, tanks etc. Below table shows the inland fishery resources of Karnataka.

Resources	Nos	Water spread area
Departmental tanks	3946	1.78 Lakh ha
Gramapanchayath tanks	24319	1.25 Lakh ha
Reservoirs	83	2.73 Lakh ha
Rivers	17	5813 km
Private ponds	-	9910 ha
Fish sanctuaries	22	-
Water logged/alkaline	-	2.39 Lakh ha
Brackish water	-	8000 ha

Source: Department of Fisheries, Government of Karnataka.

Using these resources, the farmers mainly culture the species like Catla, rohu, mrigal, common carp, catfishes and others.

Marine Fishery Resources:

Karnataka, with its extensive coastline along the Arabian Sea, boasts a vibrant and diverse marine fishery sector. The state has a 320 km coastal stretch, making it the 7th longest coastline in India. This coastal region significantly contributes to Karnataka's marine fish production and supports the livelihoods of numerous fishing communities. The below table shows the marine fishery resources of Karnataka.

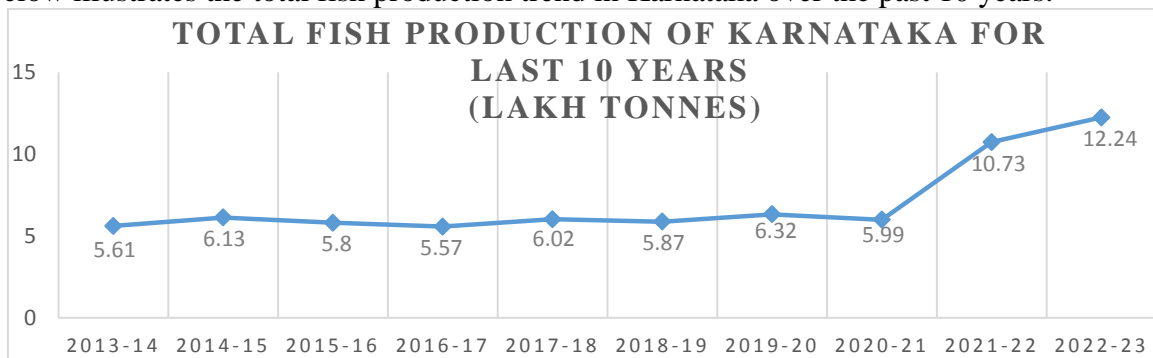
Resources	Area
Exclusive Economic Zone	87000 Sq.km
Continental Shelf	27000 Sq.km
Coastal length	320 km
Infrastructure	
Resources	no's
Fishing Ports	9
Fish landing centres	16
Beach landing centres	91

Source: Department of Fisheries, Government of Karnataka.

Using these resources, fishermen are catching fishes mainly consists of Indian mackerel, threadfin bream, oil sardine, scads and others.

Fish production trends of Karnataka:

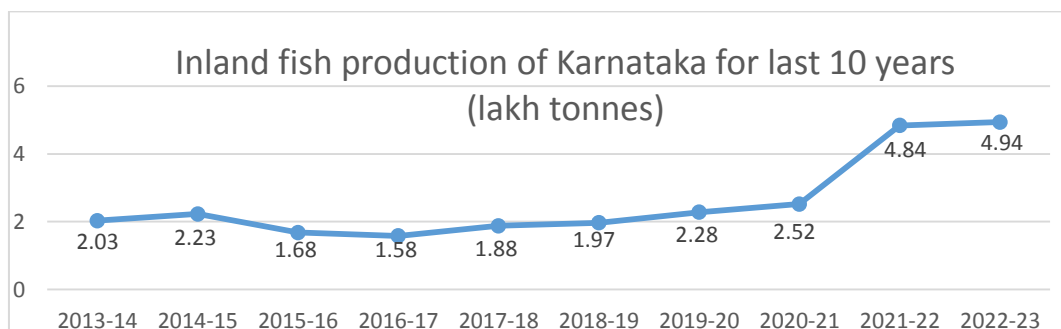
Karnataka is one of the leading centers for fish production and fish products in the country. Over the years, the state has demonstrated a positive growth trajectory in fish production, driven by both marine and inland fisheries. The graph below illustrates the total fish production trend in Karnataka over the past 10 years.



Source: Department of Fisheries, Government of Karnataka.

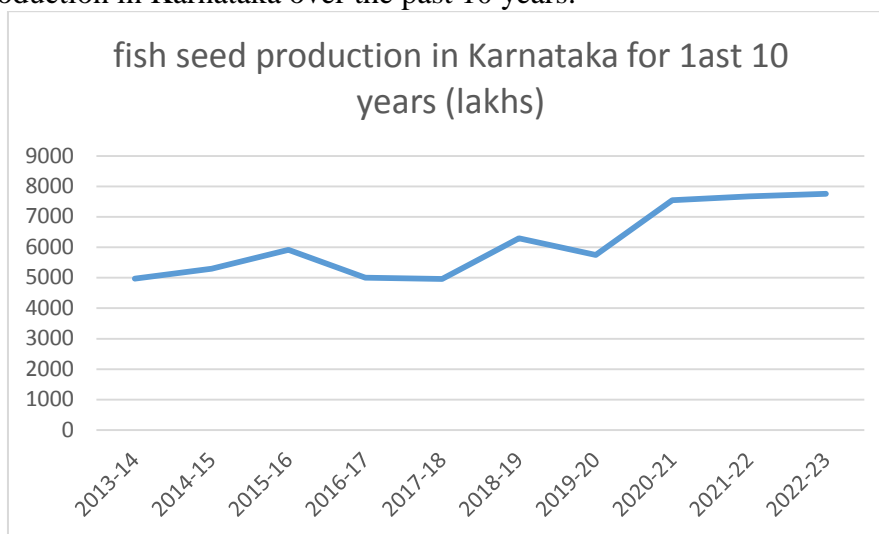
At present Karnataka has produced 12.24 lakh tonnes of fish production which constitutes 6.6% of total fish production of India for the year 2023. Currently, Karnataka ranks 3rd in overall fish production in India. The above data depicts that the total fish production experienced exponential growth from the calendar year 2013-14 to 2022-23. Significant surges were observed in the fiscal years 2021-22 and 2022-23, with production reaching 10.73 lakh tonnes and 12.24 lakh tonnes, respectively. The highest recorded production was achieved in 2022-23. However, during the COVID-19 pandemic in 2020-21, fish production declined significantly. However, post-pandemic, there was a sharp recovery, with production in 2021-22 nearly doubling compared to 2020-21. This upward trend continued in 2022-23, with a further 2% increase in production from the previous year. This remarkable growth in Karnataka's fish production may be attributed to government reforms and initiatives implemented during the COVID-19 period when much of the private sector faced closures.

Production trends in Inland fisheries Sector of Karnataka:



Source: Department of Fisheries, Government of Karnataka.

The graph above illustrates the inland fish production trend in Karnataka over the last 10 years. It clearly shows a significant surge of approximately 91% in production during 2021-22, compared to the COVID-affected year 2020-21. The key factors driving this increase in inland fish production were the Karnataka government’s enhanced efforts in fish seed production, along with the implementation of river ranching programs in river systems and the expansion of in-situ rearing sites near reservoirs during the COVID period. The following graph shows the fish seed production in Karnataka over the past 10 years.



Source: Department of Fisheries, Government of Karnataka.

The graph reveals a notable increase in fish seed production, particularly in the year 2020-21, which was primarily carried out by government-run hatcheries. During this period, commercial-level fish farming activities were minimal, resulting in a higher stocking of these fish seeds in reservoirs.

Reservoir stocking:

The state is home to 83 reservoirs, covering a total water spread area of 2.72 lakh hectares. Thousands of fishing families rely on these reservoirs for their livelihoods. To support this, it is crucial to regularly stock these reservoirs with fast-growing species such as Catla, Rohu, and Mrigal, which do not naturally reproduce in these waters. To address this need, approximately 75% of the fish seeds produced by the government are stocked in departmental tanks, while the remaining seeds are distributed in public ponds and reservoirs.

year	No of reservoirs stocked	No of fish seed stocked
2017-18	24	150 lakh fingerlings
2018-19	03	50 lakh fingerlings
2019-20	33	170.65 lakh fingerlings
2020-21	37	148.58 lakh fingerlings
2021-22	38	220.00 lakh fingerlings
2022-23	38	583.56 lakh fingerlings

Source: Department of Fisheries, Government of Karnataka.

The table above displays the number of fish fingerlings stocked in Karnataka's reservoirs over the past 6 years. It is evident that, starting from the COVID year 2019, the Karnataka government has placed greater emphasis on fish seed stocking in these reservoirs.

Current position of Karnataka in inland fish production:

At 2023, By producing 4.94 lakh tonnes of fishes Karnataka stands 7th position among the inland fish producing states of India.

CONCLUSION:

Karnataka's fisheries sector has demonstrated significant growth over the past decade, with total fish production increasing from 5.61 lakh tonnes in 2013-14 to 12.24 lakh tonnes in 2022-23, attributed to increased fish seed production, government initiatives, and effective utilization of inland and marine resources. Further improvement in production can be done through practicing advanced techniques like Recirculating Aquaculture Systems (RAS) and bio floc technology, coupled with financial assistance and training for fish farmers, which can significantly

boost productivity. By addressing these areas, Karnataka can further strengthen its fisheries sector, ensuring sustainable growth, enhanced productivity, and better economic outcomes for those dependent on this vital sector.

REFERENCES:

- Department of Fisheries, Government of India (2024), Handbook on fisheries statistics 2023.
- Department of Fisheries, Government of Karnataka (2020) *Karnataka Handbook of Fisheries statistics 2020*.
- Department of Fisheries, Government of Karnataka. (2022). *Annual Report 2021-22*
- Department of Fisheries, Government of Karnataka. (2022-23). *Karnataka Fisheries Statistics at a Glance 2022-23*.
- Department of Fisheries, Government of Karnataka. (2023). *Annual Report 2022-23*
- Department of Fisheries, Government of Karnataka. (2023). *Annual Report 2020-21*
- Department of Fisheries, Government of Karnataka. (2023). *Annual Report 2019-20*
- Department of Fisheries, Government of Karnataka. (2023). *Annual Report 2018-19*